



DALLAS
FORT WORTH
INTERNATIONAL
AIRPORT

**CONTRACT NO. 9500551
JOB ORDER CONTRACT**

**TECHNICAL SPECIFICATIONS
PACKAGE 5 OF 5**

REQUEST FOR PROPOSALS

FEBRUARY 7, 2016

SECTION 00 01 08

CONTACTS

OWNER CONTACT

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DFW Airport, TX 75261-2008

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Construction Manager:

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Contract Administrator:

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BUILDING STANDARDS

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PART 1– GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

- A. Work of this Contract comprises general construction for the minor construction, repair, rehabilitation or alteration of a facility. Construction will be inside and outside the Airport's Air Operations Area (AOA). The Contractor shall be responsible for reviewing all existing conditions associated with the work prior to commencement of work activities.

1.2 FORMS

- A. The Contractor and all subcontractors must obtain and pay for all Airport Operations Area Access Badges and Permits as required by DFW.
- B. All appropriate forms and applications must be obtained, completed and submitted. A minimum required list of forms and applications is as follows:
 - 1. Air Operations Area Access or Parking Revenue Area Access Permits Form (1 page). This form can be obtained from DFW Code Department.
 - 2. DFW Access Badge Application (3 pages). This form can be obtained on the DFW website: <https://www.dfwairport.com/apps/aboa/index.php>
 - 3. Erosion Control Best Management Practices. This form can be obtained from DFW Environmental Affairs Department.

1.3 CONTRACT TIME & SCHEDULE MILESTONES

- A. Sequence and stage work in accordance with the requirements of the Contract Documents so as to meet the following interim requirements and final contract completion dates.
- B. Owner reserves the right to request the completion of work based on critical "Milestone" date(s).
- C. Owner reserves the right to apply Liquidated Damages associated with request the completion of work based on critical "Milestone" date(s).

1.4 HOURS OF WORK

- A. Work hours will be identified in each delivery order. Typical work hours restrictions, which are not all inclusive are listed below.
- B. Typical work hours restrictions:
 - 1. Work within aircraft parking aprons and Object Free Areas of active taxiways/taxi lanes will be restricted to the following:
 - a. From 22:45 hrs to 05:15 hrs.
 - b. Work activities within these areas may be canceled and the area reopened in the event of airfield emergencies, late airline complexes, and unforeseen conditions that could create significant delays to the airport.
 - 2. Board recognized holidays / construction blackout dates
 - a. During the Thanksgiving and Christmas holiday period, the Airport has designated construction blackout dates. Construction activity that impacts ramp level operations, roadways, guests inside the

terminals and non-emergency utility outage requests will normally not be approved during the blackout dates. Work and utility outage requests that do not impact stakeholder operations or have limited impact will be reviewed for approval on a case by case basis. The blackout period normally commences the Friday prior to the Thanksgiving holiday through to the Monday that follows the Thanksgiving holiday. The second blackout period normally commences the Friday before the Christmas holiday, through to the Monday that follows the New Year's Day holiday.

- b. The following 2016 dates have been established as Landside/Customer Service area construction blackout dates. The dates listed are the primary dates and others may follow:
- No airfield closures or lighting circuit lockouts should be scheduled beginning at 2200 hours on Friday night, November 18, 2016, until 2200 hours on Monday night, November 28, 2016.
 - No airfield closures or lighting circuit lockouts should be scheduled beginning at 2200 hours on Friday night, December 16, 2016, until 2200 hours on Monday night, January 2, 2017.

1.5 CONSTRUCTION

- A. The project shall be constructed in accordance with the requirements and restrictions shown on the construction documents, for the individual delivery order.

1.6 WORK REQUIREMENTS AND RESTRICTIONS

- A. The specific work requirements and restrictions are identified throughout the specifications and contract drawings. Special attention is to be given to the notes on contract drawings for construction phasing and sequencing that may only be amended by executing a change order.
- B. All Contractor work activities shall be under the oversight of the Owner's Authorized Representative (OAR).
- C. Do not perform work in the AOA without prior coordination with the OAR and/or without advance approval of Airfield Operations.
- D. Construction operations at the site shall be confined to areas permitted by Law, Ordinances, Permits, and these Contract Documents.
- E. Restrict construction personnel from access to areas other than those designated within these specifications and associated drawings.
- F. Obtain a permit from the DFW Department of Public Safety for all hot work activities including cutting, welding, grinding or open flame operations.
- G. The Contractor is responsible for maintaining grass (vegetation) within the construction areas on the AOA to a height of 6 to 10- inches.
- H. The Contractor may be required to submit some or all of the following items, depending on the nature of the project, prior to issuance of a construction permit. Each delivery order will identify the specific requirements:

1. **Spill Response Plan (SRP)** - Projects that involve the use of fuels, oils, paints, chemicals, and any other material that may pose a threat to human health or the environment may require a Spill Response Plan (SRP).
2. **Erosion Control Plan (ECP)** - Projects that involve the disturbance of surface soils, grass, vegetation or impervious surfaces require erosion control measures. An ECP is required for projects disturbing less than one acre.
3. **Construction Storm Water Pollution Prevention Plan (SWPPP)** - Projects that involve the disturbance of surface soils, grass, vegetation or impervious surfaces require erosion control measures. A SWPPP is required for projects disturbing one acre or more.
4. **Solid Waste Management Plan (SWMP)** - Identify the types and quantities of all solid wastes (including hazardous, non-hazardous or otherwise regulated wastes) that will be generated during this project and provide details on the management of these wastes, including labeling, storage, transportation and disposal. A sample Solid Waste Management Plan spreadsheet is contained in the Guidance document.
5. **Soil Management Plan (SMP)** - Projects that involve the excavation, stockpiling or movement of soils and subsurface drilling require a Soil Management Plan (SMP). The SMP details the procedures that will be employed to ensure the proper handling and disposition of soils.
6. **Air Emission Estimate** - Projects that involve the emission of volatile organic compounds (VOC's) or nitrogen oxides (NOx) into the atmosphere during construction or subsequent operations may require an emissions estimate.
7. **Asphalt Documentation** - Projects that involve the installation of asphalt pavement require documentation of the asphalt characteristics. The use of cutback asphalt is prohibited between April 15 and September 15.
8. **Concrete Batch Plant Documentation** - Projects that involve the operation of a concrete batch plant require information on the plant location, documentation of TCEQ's approval for the plant and a SWPPP for the plant.
9. **HVAC Documentation** - Projects that involve the installation, maintenance, repair or removal of HVAC equipment that uses Class I or Class II refrigerants require documentation as to the procedures that will be used to prevent release of refrigerants to the atmosphere.
10. **Underground Storage Tank (UST) and Above Ground Storage Tank (AST) Documents** - Projects that involve the installation, removal, repair or upgrade of UST or AST require certain documentation including the TCEQ 30-Day Construction Notification form, copy of TCEQ Contractor Registration Certificate, copy of TCEQ Contractor UST On-Site Supervisor license A and B, as applicable and documents evidencing how installation will comply with 40 CFR 112 (in particular, provide design of spill containment to be installed pursuant to 40 CFR 112.7).

11. Construction Site SPCC Plan - Projects that involve the temporary storage of petroleum fuels for fueling construction equipment in quantities greater than 42,000 gallons below ground or 1,320 gallons above ground (with any single container greater than 660 gallons) will require submittal of a Construction Site Spill Prevention, Control and Countermeasure (SPCC) Plan.

1.7 CONTRACTOR USE OF PREMISES

A. Authority and Project Coordination:

1. Coordination with the Board, governmental agencies, utility companies or other entities associated with performance of work required under this Contract shall be accomplished through the OAR.
2. Under unusual, urgent or emergency circumstances, Board Representatives such as the Departments of Public Safety and Airfield Operations may issue instructions directly to Contractor or subcontractor personnel.
3. Cooperate fully with other Contractors, Board, or FAA personnel who may be performing maintenance, navigational aid or other work within the project areas. Access to FAA facilities shall be coordinated through the OAR.
4. Notify the OAR immediately of any project conditions or situations that might affect the safety of Airport operations or constitute a deviation from the requirements and restrictions contained in these Contract Documents.

B. Safety:

The Contractor is required to prepare a Safety Manual and provide it to the OAR within seven days after the Notice to Proceed. The Safety Manual will address work in the in the entire contract, and will not be typically required by individual delivery order, unless otherwise specifically identified.

1. Ensure that all Contractor and subcontractor employees present on the job site are thoroughly familiar with and adhere to the safety and security requirements and restrictions stipulated in the Specifications before commencing work.
3. The Contractor and all subcontractors are required to attend a kickoff safety meeting prior to the start of work. Periodic safety meetings will be required during the construction of the project.
4. Implement and maintain an effective program to control the blowing of dust and debris due to wind or jet blast.
5. Provide reverse movement alarms on construction vehicles as required under OSHA regulations.
6. Ensure that all Contractor and subcontractor employees present on the job site are thoroughly familiar with and adhere to the safety and security requirements and restrictions stipulated in the Specifications before commencing work.

7. Employ adequate and OAR-approved fire and safety precautions when using open flame welding or torch cutting operations. Maintain adequate shielding to prevent pilot, employee, or public viewing of such open flame operations.
8. Provide adequate levels of artificial temporary lighting for areas of work when natural lighting is not adequate for safety and for the proper performance of work. Temporary lighting shall be approved in advance by the OAR. Lighting shall be shielded and/or aimed in a manner to prevent lighting from impairing the vision of pilots, airport personnel, air traffic controllers or the general public.
9. Provide head, ear, and eye protection to all personnel working within AOA work areas. Reflectorized vests are required outer clothing for all AOA work.
10. Adhere to supplemental project safety or security procedures that shall be prepared and issued by the OAR from time to time on an as-needed basis.
11. The Contractor shall provide a full time safety/security representative who has the authority to enforce safety requirements. For construction projects related to this Contract, that representative can have shared responsibilities, whether it be the Project Manager, Superintendent, and/or Foreman.
12. Maintain, on a 24-hour per day, seven days-a-week basis, clear unobstructed routes for routine and emergency vehicle traffic within project areas and access routes to and from project areas.

C. Construction Facilities and Storage Areas:

1. Restrict Contractor's material/equipment storage and employee parking to areas defined in the Contract documents or as approved by the OAR.
2. The Contractor assumes full responsibility for protection and safekeeping of all stored products.
3. Storage areas should be fenced and secured.
4. The Contractor will be required to hire either off duty airport DPS security or law enforcement officers or contract security guards to protect the job site, material storage areas, equipment storage areas, etc if security is required. Security guards will not be permitted to carry a firearm.
5. Do not block or obstruct any portion of any roadway while conducting activities associated with delivery or movement of materials, equipment or personnel, unless approved by the OAR in conjunction with a Traffic Control Plan.
6. General Storage: Store products immediately upon delivery and in accordance with the manufacturer's instructions, with labels and seals

intact. Protect until installed. Contractor will not be allowed to store materials in terminal areas. Storage shall be arranged to provide access for maintenance and inspection.

7. Enclosed Storage: Store products subject to damage by the elements in substantial weather tight enclosures. Maintain temperature, humidity, and ventilation per manufacturer's instructions.
8. Exterior Storage: Provide substantial platforms, blocking or skids to support fabricated products above ground; slope to provide drainage. Provide impervious sheeting over products subject to dislocation and deterioration from exposure to the elements. Provide proper drainage and prevent the mixing of refuse and chemically injurious materials.

D. Vehicle Access and Haul Routes:

1. Contractor vehicles shall have proper identification and permits for AOA access.
2. For project work areas located within the AOA, the Contractor will escort all non-permitted vehicles from AOA access gates to project work areas and from project work areas back to AOA access gates.
3. Do not unreasonably encumber site with material or equipment. All dumpsters left on the AOA shall be tightly covered to prevent debris from blowing out onto the AOA, thus creating Foreign Object Debris (FOD).

E. Storage and Disposal of Spoils and Refuse:

1. Maintain project areas in a clean and safe condition at all times. Immediately remove all trash, debris, and surplus materials from work areas regardless of source. Clean paved surfaces within project related areas as required or directed by OAR.

1.8 WORK BY OTHERS

- A. During this contract, there may be other construction activities occurring on behalf of the AIRPORT BOARD in the same area(s). Coordination and cooperation with these contractors will be required during the prosecution of the project.

1.9 INDEX OF DRAWINGS

- A. An index of all the drawings for each delivery order is to be listed on the cover sheet of the Contract Drawings set.

1.10 UNATTENDED CONSTRUCTION VEHICLES ON AIRPORT PROPERTY

- A. Construction vehicles left unattended anywhere on Airport property shall be identified with the name of the company and a telephone number that is answered 24-hours a day, on both sides of the vehicle. If there is no company contact information on the sides of the vehicle, the contact information may be printed legibly on a minimum size 12" x12" white placard, securely attached to the windshield of the vehicle and clearly visible from fifty (50) feet away. Unattended and/or unidentified vehicles are subject to removal from Airport property at the contractor's expense.

PART 2– PRODUCTS

Not Used.

PART 3– EXECUTION

Not Used.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. General project coordination of different Contract phases, trades and disciplines.
2. General coordination of construction site operations with operations of Owner.

1.2 GENERAL COORDINATION

- A. Coordinate scheduling, submittals, and work of various sections of Specifications to ensure efficient and orderly sequence of installation of construction elements with provisions for accommodating items furnished by Owner to be installed by Contractor.
- B. Coordinate construction operations included under different sections of Specifications that are dependent upon each other for proper installation, connection, and operation.
- C. Coordinate sequence of Work to accommodate partial Owner occupancy as specified in Section 01 11 00, Summary of Work.
- D. Coordinate construction operations when constructing within the Aircraft Operations Area (AOA)
- E. Coordinate Quality Assurance testing as specified in Section 01 45 23, Testing and Inspecting Services.
- F. Maintain services of major subcontractors throughout duration of Contract, except as required by provisions of General Conditions of Contract. Notify Owner in writing of intention to replace subcontractors, outlining reasons for action and naming proposed replacement subcontractor.
- G. Each subcontractor shall ensure that devices and equipment installed under its subcontract is operational. Subcontractor shall inform Contractor when completion and operation of their system is dependent on work of other trades. Arbitrate and resolve coordination conflicts between subcontractors to ensure complete and operational systems.
- H. Coordinate work of subcontractors, and record subcontractor installation data on Project Record Drawings in accordance with Section 01 78 39, Project Record Documents.
- I. Coordinate installation of Owner-furnished equipment.
- J. Communications to Owner from Contractor regarding Contract requirements shall be through Owner's Authorized Representative.

1.3 COORDINATION MEETINGS

- A. In addition to project meetings scheduled in Section 01 31 19, Project Meetings, hold coordination meetings and pre-installation meetings with Contractor's personnel, subcontractors, suppliers, manufacturers, and Owner, as necessary, to assure coordination of different trades and disciplines.
- B. Schedule coordination and pre-installation meetings with Owner's Authorized Representative. Meeting shall initially be called within 10 days of Notice to Proceed.
- C. When necessary, prepare memoranda for distribution to each party outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings. Prepare similar memoranda for Owner's Authorized Representative and separate contractors when coordination of their work is required.
- D. Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of schedules.
 - 2. Installation and removal of temporary facilities.
 - 3. Delivery and processing of submittals
 - 4. Progress meetings
 - 5. Project closeout procedures
 - 6. Recording and distributing meeting minutes

1.4 COORDINATION OF SUBMITTALS

- A. Schedule and coordinate submittals.
- B. Coordinate Work of various trades having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate compatibility of space, of operating elements, effect on Work of other trades, and on Work scheduled for early completion.

1.5 COORDINATION OF SPACE AND INSTALLATION SEQUENCE

- A. Coordinate use of project space and sequence of installation of equipment, elevators, escalators, walks, mechanical, electrical, plumbing, baggage handling systems, information/telecommunications/security systems or other Work that is indicated diagrammatically on Drawings. Follow routings shown for tubes, pipes, ducts, conduits, and other items as closely as practical, with due allowance for available physical space. Make runs parallel with lines of building, except where not feasible by construction. Utilize space efficiently to maximize accessibility for other installations, for Owner maintenance, and for repairs.
- B. Except as otherwise indicated in finished areas, conceal ducts, pipes, wiring, and other non-finish items within construction. Coordinate locations of concealed and exposed items with finish elements.
- C. Where availability of space is limited, coordinate installation of different components to ensure maximum accessibility for required maintenance, service and repair.

- D. Coordinate exact location and dimensioning of exposed items and items which occur within, hung ceilings with reflected ceiling plans. In event of conflict, request clarification from Owner's Authorized Representative prior to proceeding with fabrication or installation.
- E. Contractor shall be responsible for coordination of Work. Ensure subcontractors coordinate their Work with the Work of the Contractor and other trades. Prepare coordination drawings as required by individual technical sections and hold coordination meetings in accordance with Section 01 33 23, Shop Drawings, Product Data, and Samples.
- F. Schedule construction sequence required to obtain best results where installation of one part of work is dependent on installation of other components.
- G. Accommodate items scheduled for later installation, including accepted Bid alternates, Owner-supplied Contractor-installed items, Work by others, and installation of products purchased with allowances.
- H. Verify the new location(s) are within the scope of the asbestos survey when necessary to deviate from routings shown in the Drawings. Contact the Owner's Authorized Representative if the proposed routing changes are not covered by the project asbestos survey before proceeding. The Owner's Authorized Representative will obtain a survey amendment.

1.6 COORDINATION OF BUILDINGS FINISHES

- A. Identify each room by name and number as it appears on finish schedules by posting a room identification sign outside each room at main entry to each room. Identification shall be clearly visible, legible, and attached without damaging surface.
- B. Post accepted finishes scheduled for each room on each door or frame in a manner that does not damage or stain surface. Use copy of accepted finish schedule that clearly identifies each finish and location of finishes for that particular room or area.
- C. Room identification signs and finish schedules shall remain posted until permanent interior signage has been installed and Owner's Authorized Representative has reviewed finishes, unless otherwise directed.
- D. Where mounting heights are not indicated, refer decisions to Owner's Authorized Representative prior to installation.

1.7 COORDINATION OF CONTRACT CLOSEOUT

- A. Coordinate completion and cleanup of Work of separate phases and sections in preparation for Substantial Completion of portions of Work designated for Owner partial occupancy as designated in Section 01 11 00, Summary of Work and Section 01 74 23, Final Cleaning.
- B. Coordinate access to site by Contractor for correction of defective Work after Owner has occupied the project. Minimize disruption of Owner's operations.
- C. Assemble and coordinate closeout submittals in accordance with Section 01 77 00, Closeout Procedures.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. This specification covers requirements to determine if an operation is classified as a significant industrial user and is therefore required to obtain a Significant Industrial User Permit from DFW Airport Board (DFW Airport).

1.2 REFERENCES

The following is a list of regulations which may be referenced in this Section:

- A. U.S. Code of Federal Regulations (CFR): 40 CFR 403, General Pretreatment Regulations for Existing and New Sources of Pollution.
- B. The Code of Rules and Regulations of the Dallas–Fort Worth International Airport Board (DFW Airport) Code of Rules & Regulations – Chapter 6, Wastewater Pretreatment and Discharge Rules and Regulations.

1.3 ABBREVIATIONS

- A. EAD: DFW Airport Environmental Affairs Department.
- B. USEPA: United States Environmental Protection Agency.
- C. POTW: Publicly Owned Treatment Works.
- D. TCEQ: Texas Commission on Environmental Quality

1.4 DEFINITIONS

- A. Categorical Standards: National Categorical Pretreatment Standards or Pretreatment Standard as set forth in any regulation containing pollutant discharge limits promulgated by the USEPA which applies to a specific category of industrial Users.
- B. Industrial User: A non-residential source of Indirect Discharge as defined in 40 CFR 403 which does not constitute a 'discharge of pollutants' to a receiving stream under Clean Water Act.
- C. Significant Industrial User: Any user meeting the following criteria:
 - 1. Industrial users subject to categorical pretreatment standards as defined in 40 CFR 403; and/or
 - 2. Any other industrial user that:
 - a. Discharges an average of 25,000 gallons per day (gpd) or more of process wastewater; (excluding boiler blow down and non-contact cooling water)
 - b. Contributes a process waste stream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the treatment plant or;
 - c. Is designated as significant by the Owner on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.

1.5 SUBMITTALS

- A. All submittals must comply with the DFW Airport Code of Rules and Regulations.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 COMPLIANCE

- A. Comply with all federal, state, and DFW Airport Code of Rules and Regulations.
- B. Contractor shall not introduce or cause to be introduced into the Publicly Owned Treatment Works (POTW) any pollutant or wastewater which causes pass through or interference.
- C. If wastewater will be discharged, Contractor shall determine if they are a significant industrial user as defined in applicable regulations. Significant industrial users shall be required to obtain a permit prior to discharge.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Requests for substitutions of products.

1.2 RELATED REQUIREMENTS

A. Section 01 61 16 - Materials and Equipment

1.3 DEFINITIONS

A. Substitutions: Request for changes in products, materials, equipment and methods of construction required by Contract Documents after issuance of delivery order are considered request for "substitutions". The following are not considered substitutions:

1. An addendum will be issued for substitutions requested by the contractor prior to issuance of the delivery order. Such substitutions are considered as included in the Contract Documents, and are not subject to requirements specified in this Section.
2. Specified options of products and construction methods included in the Contract Documents.
3. Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 CONTRACTOR'S REPRESENTATION

A. Request for substitution is a representation that Contractor:

1. Has investigated proposed product and has determined that it is equal to or superior in all respects to that specified.
2. Will provide same warranties or bonds for substitution as for product specified.
3. Will coordinate installation of accepted substitution into Work, and will make such changes as may be required for Work to be complete in all respects.
4. Waives claims for additional costs caused by substitution, which may subsequently become apparent.
5. Has provided complete cost data which includes related costs under this Contract, but not costs under separate contracts.

1.5 OWNER'S DUTIES

- A. Owner will determine acceptability of proposed substitutions.**
- B. Owner will review Contractor's requests for substitutions with reasonable promptness.**
- C. Owner will notify Contractor, in writing, of decision to accept or reject requested substitution.**

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- D. Owner or design professionals review, acceptance or failure to take exceptions to substitutions or other review documents, shall not relieve Contractor of responsibility for item meeting performance or other requirements of Contract Documents.

PART 2 PRODUCTS

2.1 SUBSTITUTIONS

- A. Contractor's Options
1. For products specified only by reference or performance standards, select any approved product and manufacturer meeting that standard.
 2. For products specified by naming several products or manufacturers, select any approved product and named manufacturer which complies with Specifications.
 3. For products specified by naming one or more products and manufacturers, there is no option, unless a substitution is approved.
- B. Owner's Authorized Representative will consider requests from Contractor for substitution of products in place of those specified only on the attached form.
- C. Substitutions will only be considered when the Contractor can demonstrate to the satisfaction of the Owner's Authorized Representative that there is reasonable cause for requesting the substitution.
- D. Submit separate request for each substitution, supported with complete data, drawings and appropriate samples substantiating compliance of proposed substitution with Contract Documents, including:
1. Complete data substantiating compliance of proposed substitution with requirements stated in Contract Documents:
 - a. Product identification, including manufacturer's name and address.
 - b. Manufacturer's Literature: Identify with product description, reference standards, and performance and test data.
 - c. Drawings, samples, as applicable.
 - d. Name and address of similar projects on which product has been used, and date of each installation.
 2. Itemized comparison of proposed substitution including its quantities with product specified and list significant variations.
 3. Data relating to changes in construction schedule. Indicate the effect of proposed substitution on overall Contract Time.
 4. Adjustment in delivery order price for each substitution.
 5. Changes required in other elements of Work and to construction performed by Owner or separate Contractors, if any, to accommodate proposed substitution.

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6. Availability of maintenance service and source of replacement parts and materials, as applicable.
 7. Provide test data from independent testing laboratory to show compliance with performance characteristics specified.
 8. Designation of required license fees or royalties.
- E. Properties including, but not limited to the following, will be considered as applicable:
1. Physical dimension requirements to satisfy space limitations.
 2. Static and dynamic weight limitations, structural properties.
 3. Audible noise levels.
 4. Vibration generation.
 5. Interchangeability of parts or components.
 6. Accessibility for maintenance, possible removal or replacement.
 7. Colors, textures and compatibility with other materials, products, assemblies and components.
 8. Equipment capacities and performance characteristics.
- F. Substitutions will not be considered for acceptance when:
1. Indicated or implied on shop drawings or product data submittals without formal request from Contractor for a modification to the Contract Documents.
 2. Requested directly by subcontractor or supplier.
 3. Acceptance will require substantial revision of Contract Documents or Contract or delivery order time.
 4. Additional cost to Owner is involved.
- G. Do not order or install substitute products without written acceptance of Owner's Authorized Representative.
- H. Assume full responsibility for justifying each substitution. Owner's decision of acceptance or rejection of proposed substitution will be final.
- I. If proposed substitution is not accepted, provide specified product or materials.
- J. Pay for any expenses incurred by Owner or his design professionals for changes to Contract Documents required by accepted Contractor requested substitutions.

PART 3 – EXECUTION

Not Used.

- END OF SECTION -

PART 1 – GENERAL

1.1 GENERAL

- A. Prepare and submit Applications for Payment.

1.2 FORMAT

- A. Use the Pay Request Forms provided at the Preconstruction Conference.
 - 1. DFW Form E-184 – Construction Contract Pay Request
 - 2. M/WBE PPAR Form – Pay Period Activity Report
- B. Adequate copies of the DFW forms may be obtained from the Owner's Authorized Representative.

1.3 PREPARATION OF APPLICATIONS

- A. Type required information on the Pay Request Form.
- B. Execute certification by signature of Contractor's Authorized Representative. The copy submitted must have an original signature in ink of the Contractor's Authorized Representative.
- C. Use data on Approved Project Schedule with the Schedule of Values or from actual computer produced Cost Control Reports, as applicable. Provide percent complete for each line item for portion of Work performed.
- D. Prepare Application for Final Payment as specified in the Construction Contract General Provisions, Measurement and Payment.

1.4 SUBMITTAL PROCEDURES

- A. Submit one originally signed copy of the Pay Request Forms at times designated in the schedule provided at the preconstruction conference.

1.5 SUBSTANTIATING DATA

- A. When the Owner requires substantiating information, submit data justifying line item amounts in question.
- B. Provide one copy of data with cover letter for each copy of submittal. Show Application number and date, and line item by number and description.
- C. Copy of the project schedule, updated to the application date line.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes procedures for preparation and submittal of Schedule of Values.

1.2 FORMAT

- A. Provide Schedule of Values on 8-1/2 by 11 inch bond paper.
- B. Contractor's standard form or media-driven printout will be considered on request.

1.3 CONTENT

- A. List installed value of each major item as a separate line item to serve as a basis for computing values for Progress Payments.
- B. Include Allowances as a separate line item. Coordinate listings with Progress Schedule general activities.
- C. List values for cost of stored products with taxes paid for items on which payments will be requested for stored products,
- D. The sum of values listed shall equal total Contract Sum.

1.4 SUBMITTAL

- A. Submit three copies of Schedule of Values at the Pre-construction Conference.
- B. Transmit under Owner-accepted form transmittal letter. Identify Project by title and number; identify Contract by number.

1.5 SUBSTANTIATING DATA

- A. When Owner's Authorized Representative requires substantiating information, submit data justifying line item amounts in question.
- B. Provide one copy of data with cover letter for each copy of application. Show application number and date, and line item by number and description.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes the required Forms and Schedules.

1.2 FORMS

- A. Request for Authorization of Additional Classification and Rate - Standard Form 1444 (www.wdol.gov/docs/sf1444.pdf)
- B. General Wage Decision Rates for Tarrant and Dallas County, Texas (<http://www.wdol.gov/wdol/scafiles/davisbacon/TX43.dvb>)

1.3 WAGE RATES

- A. U.S. Department of Labor (DOL) provides the required minimum wages and fringe benefits to be paid to all laborers and mechanics employed to work on this contract, either under this contract or under a related subcontract. The Contractor and all subcontractors are required to report the actual wages paid to laborers and mechanics doing work under this contract. The reported wages will be verified by review of the weekly payroll reports and by periodic on-site interviews conducted by the Construction Manager.
- B. The Wage Determination establishes the minimum wages and fringe benefits to be paid to laborers and mechanics throughout the duration of this contract. In no event shall these minimum wages be modified.
- C. In the event that the work specified in this contract requires work to be done by laborers or mechanics whose job classification is not listed in the Wage Determination, the Contractor is responsible for preparing the attached Request for Authorization of Additional Classification and Rate Standard Form 1444 (additional copies are available from the Owner's Authorized Representative). The Contractor must complete Items 3 through 15 and submit the request to the Owner's Authorized Representative prior to issuance of the Contractor's Notice to Proceed or as soon as the need for the additional classification or rate is identified (if the work has been authorized to begin). DOL will not review or add a new wage rate, but that final determination will be made by the OAR.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

General Decision Number: TX160291 01/15/2016 TX291

Superseded General Decision Number: TX20150291

State: Texas

Construction Type: Building

County: Dallas County in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016
1	01/15/2016

ASBE0021-011 05/01/2013

Rates	Fringes
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ASBESTOS WORKER/HEAT & FROST INSULATOR (Duct, Pipe and Mechanical System Insulation)....\$ 21.52	7.15
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BOIL0074-003 01/01/2014

Document Title: WAGE RATE REQUIREMENTS

Section: 01 29 85

	Rates	Fringes
BOILERMAKER.....	\$ 23.14	21.55

CARP1421-002 04/01/2014

	Rates	Fringes
MILLWRIGHT.....	\$ 25.30	8.30

*** ELEV0021-006 01/01/2016**

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 38.01	29.985+a

**FOOTNOTES: a - A. 6% under 5 years based on regular hourly
rate for all hours worked. 8% over 5 years based on
regular hourly rate for all hours worked.**

**New Year's Day, Memorial Day, Independence Day, Labor Day,
Thanksgiving Day, the Friday after Thanksgiving Day,
Christmas Day, and Veterans Day.**

ENGI0178-005 06/01/2014

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
(1) Tower Crane.....	\$ 29.00	10.60
(2) Cranes with Pile Driving or Caisson		

Attachment and Hydraulic		
Crane 60 tons and above.....	\$ 28.75	10.60
(3) Hydraulic cranes 59		
Tons and under.....	\$ 27.50	10.60

IRON0263-005 06/01/2015

	Rates	Fringes
IRONWORKER (ORNAMENTAL AND		
STRUCTURAL).....	\$ 23.00	6.55

PLUM0100-005 07/01/2013

	Rates	Fringes
HVAC MECHANIC (HVAC Unit		
Installation Only).....	\$ 26.88	8.83
PIPEFITTER (Excludes HVAC		
Pipe Installation).....	\$ 26.88	8.83

SUTX2014-017 07/21/2014

	Rates	Fringes
BRICKLAYER.....		
	\$ 19.50	4.27
CARPENTER, Excludes Drywall		
Hanging, Form Work, and Metal		
Stud Installation.....	\$ 17.13	2.97
CAULKER.....		
	\$ 14.71	0.00
CEMENT MASON/CONCRETE FINISHER...		
	\$ 13.40	0.00

DRYWALL HANGER AND METAL STUD

INSTALLER.....\$ 15.45 0.00

ELECTRICIAN (Alarm

Installation Only).....\$ 21.52 4.16

ELECTRICIAN (Communication

Technician Only).....\$ 16.40 2.87

ELECTRICIAN (Low Voltage

Wiring Only).....\$ 20.03 3.04

ELECTRICIAN, Excludes Low

Voltage Wiring and

Installation of Alarms/Sound

and Communication Systems.....\$ 21.51 3.69

FORM WORKER.....\$ 12.32 0.00

GLAZIER.....\$ 16.15 2.13

HIGHWAY/PARKING LOT STRIPING:

Operator (Striping Machine).....\$ 10.04 2.31

INSTALLER - SIDING

(METAL/ALUMINUM/VINYL).....\$ 14.26 0.00

INSTALLER - SIGN.....\$ 15.61 0.00

INSULATOR - BATT.....\$ 13.00 0.00

IRONWORKER, REINFORCING.....\$ 12.24 0.00

Document Title: WAGE RATE REQUIREMENTS
Section: 01 29 85

LABORER: Common or General.....	\$ 11.57	0.00
LABORER: Mason Tender - Brick...	\$ 11.00	1.70
LABORER: Mason Tender - Cement/Concrete.....	\$ 10.64	0.00
LABORER: Pipelayer.....	\$ 13.00	0.35
LABORER: Plaster Tender.....	\$ 14.50	0.00
LABORER: Roof Tearoff.....	\$ 11.28	0.00
LABORER: Landscape and Irrigation.....	\$ 12.00	0.23
LATHER.....	\$ 16.00	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 13.06	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 13.93	0.00
OPERATOR: Bulldozer.....	\$ 18.29	1.31
OPERATOR: Drill.....	\$ 13.00	0.50
OPERATOR: Forklift.....	\$ 13.38	0.81
OPERATOR: Grader/Blade.....	\$ 13.05	0.00
OPERATOR: Loader.....	\$ 14.02	1.82

Document Title: WAGE RATE REQUIREMENTS**Section: 01 29 85**

OPERATOR: Mechanic.....	\$ 17.52	3.33
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 18.44	0.00
OPERATOR: Roller.....	\$ 15.04	0.00
PAINTER (Brush, Roller and Spray, Excluding Drywalling/Taping).....	\$ 13.60	2.24
PAINTER: Drywall Finishing/Taping Only.....	\$ 14.28	3.04
PLASTERER.....	\$ 15.37	0.00
PLUMBER (HVAC Pipe Installation Only).....	\$ 23.87	6.66
PLUMBER, Excludes HVAC Pipe Installation.....	\$ 22.70	5.65
ROOFER.....	\$ 17.19	0.00
SHEET METAL WORKER (HVAC Duct Installation Only).....	\$ 21.10	5.50
SHEET METAL WORKER, Excludes HVAC Duct Installation.....	\$ 24.88	7.23
SPRINKLER FITTER (Fire Sprinklers).....	\$ 21.25	15.55
TILE FINISHER.....	\$ 11.22	0.00

TILE SETTER.....	\$ 14.25	0.00
TRUCK DRIVER: 1/Single Axle		
Truck.....	\$ 16.40	0.81
TRUCK DRIVER: Dump Truck.....	\$ 12.39	1.18
TRUCK DRIVER: Flatbed Truck.....	\$ 19.65	8.57
TRUCK DRIVER: Semi-Trailer		
Truck.....	\$ 12.50	0.00
TRUCK DRIVER: Water Truck.....	\$ 12.00	4.11

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification
and wage rates that have been found to be prevailing for the
cited type(s) of construction in the area covered by the wage

determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and

non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator

U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION
- END OF SECTION -

Document Title: WAGE RATE REQUIREMENTS
Section: 01 29 85

General Decision Number: TX160322 01/15/2016 TX322

Superseded General Decision Number: TX20150322

State: Texas

Construction Type: Building

County: Tarrant County in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016
1	01/15/2016

ASBE0021-011 05/01/2013

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR (Duct, Pipe and Mechanical System Insulation).....	\$ 21.52	7.15

BOIL0074-003 01/01/2014

	Rates	Fringes
BOILERMAKER.....	\$ 23.14	21.55

CARP1421-002 04/01/2014

	Rates	Fringes
MILLWRIGHT.....	\$ 25.30	8.30

* ELEV0021-006 01/01/2016

Document Title: WAGE RATE REQUIREMENTS
Section: 01 29 85

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 38.01	29.985+a

FOOTNOTES: a - A. 6% under 5 years based on regular hourly rate for all hours worked. 8% over 5 years based on regular hourly rate for all hours worked.

New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and Veterans Day.

ENGI0178-005 06/01/2014

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
(1) Tower Crane.....	\$ 29.00	10.60
(2) Cranes with Pile Driving or Caisson Attachment and Hydraulic Crane 60 tons and above.....	\$ 28.75	10.60
(3) Hydraulic cranes 59 Tons and under.....	\$ 27.50	10.60

IRON0263-005 06/01/2015

	Rates	Fringes
IRONWORKER (ORNAMENTAL AND STRUCTURAL).....	\$ 23.00	6.55

PAIN0053-004 04/01/2014

	Rates	Fringes
PAINTER (Brush, Roller, and Spray (Excludes Drywall Finishing/Taping)).....	\$ 16.40	5.45

PLUM0146-003 05/01/2014

	Rates	Fringes
PIPEFITTER (Excludes HVAC Pipe Installation).....	\$ 27.88	7.90

SUTX2014-048 07/21/2014

	Rates	Fringes
BRICKLAYER.....	\$ 20.66	0.00

CARPENTER, Excludes Drywall Hanging, Form Work, and Metal

Document Title: WAGE RATE REQUIREMENTS**Section: 01 29 85**

Stud Installation.....	\$ 15.47	1.82
CEMENT MASON/CONCRETE FINISHER...	\$ 13.44	0.00
DRYWALL FINISHER/TAPER.....	\$ 16.24	3.94
DRYWALL HANGER AND METAL STUD INSTALLER.....	\$ 16.20	3.40
ELECTRICIAN (Alarm Installation Only).....	\$ 18.00	0.38
ELECTRICIAN (Low Voltage Wiring Only).....	\$ 14.88	2.15
ELECTRICIAN (Sound and Communication Systems Only).....	\$ 17.79	2.41
ELECTRICIAN, Excludes Low Voltage Wiring and Installation of Alarms/Sound and Communication Systems.....	\$ 20.59	3.98
FORM WORKER.....	\$ 12.35	0.00
GLAZIER.....	\$ 16.61	2.96
HVAC MECHANIC (HVAC Unit Installation Only).....	\$ 22.39	7.10
INSTALLER - SIDING (METAL/ALUMINUM/VINYL)	\$ 15.77	0.00
IRONWORKER, REINFORCING.....	\$ 12.19	0.00
LABORER: Common or General.....	\$ 11.30	0.00
LABORER: Mason Tender - Brick...	\$ 10.50	0.00
LABORER: Mason Tender - Cement/Concrete.....	\$ 10.81	0.00
LABORER: Pipelayer.....	\$ 13.00	0.35
LABORER: Roof Tearoff.....	\$ 11.28	0.00
LABORER: Landscape and Irrigation.....	\$ 10.00	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 13.09	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 13.93	0.00
OPERATOR: Bulldozer.....	\$ 18.29	1.31

Document Title: WAGE RATE REQUIREMENTS
Section: 01 29 85

OPERATOR: Drill.....	\$ 17.60	0.50
OPERATOR: Forklift.....	\$ 14.20	0.00
OPERATOR: Grader/Blade.....	\$ 12.95	0.00
OPERATOR: Loader.....	\$ 12.89	1.19
OPERATOR: Mechanic.....	\$ 17.52	3.33
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 18.44	0.00
OPERATOR: Roller.....	\$ 15.04	0.00
PIPEFITTER (HVAC Pipe Installation Only).....	\$ 21.28	4.45
PLASTERER.....	\$ 15.30	0.00
PLUMBER, Excludes HVAC Pipe Installation.....	\$ 22.10	4.17
ROOFER.....	\$ 15.70	0.58
SHEET METAL WORKER (HVAC Duct Installation Only).....	\$ 21.54	5.59
SHEET METAL WORKER, Excludes HVAC Duct Installation.....	\$ 18.63	0.65
SPRINKLER FITTER (Fire Sprinklers).....	\$ 19.27	3.68
TILE FINISHER.....	\$ 11.22	0.00
TILE SETTER.....	\$ 12.00	0.00
TRUCK DRIVER: Dump Truck.....	\$ 12.39	1.18
TRUCK DRIVER: Flatbed Truck.....	\$ 19.65	8.57
TRUCK DRIVER: Semi-Trailer Truck.....	\$ 12.50	0.00
TRUCK DRIVER: Water Truck.....	\$ 12.00	4.11

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

=====

Unlisted classifications needed for work not included within

Document Title: WAGE RATE REQUIREMENTS
Section: 01 29 85

the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

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Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

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Survey wage rates are not updated and remain in effect until a new survey is conducted.

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A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Document Title: WAGE RATE REQUIREMENTS

Section: 01 29 85

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION

Document Title: WAGE RATE FORM
Section: 01 29 85.13

AUTHORIZED FOR LOCAL REPRODUCTION				
REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND RATE			CHECK APPROPRIATE BOX <input type="checkbox"/> SERVICE CONTRACT <input type="checkbox"/> CONSTRUCTION CONTRACT	OMB Number: 8000-0089 Expiration Date: 7/31/2014
Public reporting burden for this collection of information is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the FAR Secretariat (MVP), Office of Acquisition Policy, GSA, Washington, DC 20405; and to the Office of Management and Budget, Paperwork Reduction Project (9000-0089), Washington, DC 20503.				
INSTRUCTIONS: THE CONTRACTOR SHALL COMPLETE ITEMS 3 THROUGH 16, KEEP A PENDING COPY, AND SUBMIT THE REQUEST, IN QUADRUPPLICATE, TO THE CONTRACTING OFFICER.				
1. TO: ADMINISTRATOR, Employment Standards Administration WAGE AND HOUR DIVISION U.S. DEPARTMENT OF LABOR WASHINGTON, D.C. 20210			2. FROM: (REPORTING OFFICE)	
3. CONTRACTOR			4. DATE OF REQUEST	
5. CONTRACT NUMBER	6. DATE BID OPENED (SEALED BIDDING)	7. DATE OF AWARD	8. DATE CONTRACT WORK STARTED	9. DATE OPTION EXERCISED (IF APPLICABLE) (SCA ONLY)
10. SUBCONTRACTOR (IF ANY)				
11. PROJECT AND DESCRIPTION OF WORK (ATTACH ADDITIONAL SHEET IF NEEDED)				
12. LOCATION (CITY, COUNTY AND STATE)				
13. IN ORDER TO COMPLETE THE WORK PROVIDED FOR UNDER THE ABOVE CONTRACT, IT IS NECESSARY TO ESTABLISH THE FOLLOWING RATE(S) FOR THE INDICATED CLASSIFICATION(S) NOT INCLUDED IN THE DEPARTMENT OF LABOR DETERMINATION				
NUMBER:		DATED:		
a. LIST IN ORDER: PROPOSED CLASSIFICATION TITLE(S); JOB DESCRIPTION(S); DUTIES; AND RATIONALE FOR PROPOSED CLASSIFICATIONS (SCA ONLY) <small>(Use reverse or attach additional sheets, if necessary)</small>		b. WAGE RATE(S)		c. FRINGE BENEFITS PAYMENTS
14. SIGNATURE AND TITLE OF SUBCONTRACTOR REPRESENTATIVE (IF ANY)		15. SIGNATURE AND TITLE OF PRIME CONTRACTOR REPRESENTATIVE		
16. SIGNATURE OF EMPLOYEE OR REPRESENTATIVE		TITLE	CHECK APPROPRIATE BOX-REFERENCING BLOCK 13. <input type="checkbox"/> AGREE <input type="checkbox"/> DISAGREE	
TO BE COMPLETED BY CONTRACTING OFFICER (CHECK AS APPROPRIATE - SEE FAR 22.1019 (SCA) OR FAR 22.406-3 (DBA))				
<input type="checkbox"/> THE INTERESTED PARTIES AGREE AND THE CONTRACTING OFFICER RECOMMENDS APPROVAL BY THE WAGE AND HOUR DIVISION. AVAILABLE INFORMATION AND RECOMMENDATIONS ARE ATTACHED.				
<input type="checkbox"/> THE INTERESTED PARTIES CANNOT AGREE ON THE PROPOSED CLASSIFICATION AND WAGE RATE. A DETERMINATION OF THE QUESTION BY THE WAGE AND HOUR DIVISION IS THEREFORE REQUESTED. AVAILABLE INFORMATION AND RECOMMENDATIONS ARE ATTACHED.				
<small>(Send copies 1, 2, and 3 to Department of Labor)</small>				
SIGNATURE OF CONTRACTING OFFICER OR REPRESENTATIVE		TITLE AND COMMERCIAL TELEPHONE NO.		DATE SUBMITTED
PREVIOUS EDITION IS USABLE				
STANDARD FORM 1444 (REV. 12-2001) Prescribed by GSA-FAR (48 CFR) 53.222(f)				

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Contractor participation in Pre-Construction Conference.**
- B. Contractor participation in Site Mobilization Conference.**
- C. Contractor participation in Progress Meetings.**

1.2 PRE-CONSTRUCTION CONFERENCE

- A. The Owner's Authorized Representative will schedule the "Pre-Construction Conference" after the Notice to Proceed for a delivery order has been issued.**
- B. Attendance: Owner's Authorized Representative, Architect/Engineer, Consultants and Contractor.**
- C. Agenda:**
 - 1. Purpose of the meeting;**
 - 2. Brief project description;**
 - 3. Project duration and milestones;**
 - 4. Introduction and explanation of functions of DFW, personnel and organization (including responsibilities and authority);**
 - 5. DFW requirements**
 - a. Wage Rates**
 - b. Payroll audits**
 - c. M/WBE Goals**
 - d. Pay Estimate Forms, Procedures and Applications**
 - e. Field Alteration Forms and Procedures**
 - f. Security Badge Procedures**
 - g. Other Security Procedures**
 - 6. Project Control Procedures**
 - a. Project Meetings**
 - b. Construction Schedules**
 - c. Major Equipment Deliveries and Priorities**
 - d. Submittals**
 - e. Alternates/Substitutions**
 - f. Utilities**
 - g. Contractor's Quality Control Plan**
 - h. Security and Housekeeping**
 - i. Maintenance and Protection of Vehicular and Pedestrian Traffic**

j. Coordination of the Work

7. Construction Management Procedures

- a. Permits
- b. Correspondence and Documentation
- c. Processing of RFI's
- d. Coordination of contract work with adjacent projects
- e. Monthly Progress Photographs and Videos
- f. Environmental Concerns and Drainage Control
- g. Contract Modification and Claim Procedures
- h. Completion of the Work and Punch List procedures
- i. Record Drawings
- j. Final payment and Closeout Procedures

1.3 SITE MOBILIZATION CONFERENCE

- A. Owner will schedule a conference at Project site prior to Contractor occupancy.
- B. Attendance: Owner's Authorized Representative, Architect/Engineer, Consultants, Contractor, and major subcontractors.
- C. Agenda:
 - 1. Use of roadways by Owner and Contractor.
 - 2. Roadway closing.
 - 3. Transporting equipment.
 - 4. Temporary utilities.
 - 5. Schedules
 - 6. Procedures for maintaining record documents.
 - 7. Requirements for start-up of equipment.
 - 8. Inspection and acceptance of equipment put into service during construction period.

1.4 PROGRESS MEETINGS

- A. Project meetings will be held weekly to monitor the progress of the work, or as needed for individual delivery orders.
- B. The Contractor shall make physical arrangements for meetings; prepare agenda with copies for participants. The Contractor's Authorized Representative will preside at these meetings to record minutes, and prepare and distribute copies of minutes.

- C. Attendance: Job superintendent, major subcontractors and suppliers; Architect/Engineer as appropriate to agenda topics for each meeting, and Owner's Authorized Representative.
- D. Suggested Agenda:
 - 1. Review of work progress
 - 2. Status of progress schedule and adjustments to progress schedule
 - 3. Delivery schedules
 - 4. Submittals
 - 5. Safety
 - 6. Maintenance of quality standards
 - 7. Pending changes and substitutions
 - 8. Other items affecting progress of Work

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

- END OF SECTION -

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for schedules and reports required for proper performance of the Work.
- B. Before the Contractor can start work, a project schedule shall be submitted, and approved by the Project Controls Owner's Authorized Representative (OAR).

1.2 REFERENCE SECTIONS

- A. Section 01 11 00 - Summary of Work

1.3 REQUIREMENTS

- A. The Contractor shall prepare and maintain a project Schedule in accordance with the requirements of this Section. The schedule shall be primarily a Critical Path Method (CPM) Diagram. A Gantt Bar chart may be required in lieu of a CPM Diagram for relatively small projects. The type of schedule required will be identified in each delivery order. The requirement for a Schedule is included to:
 - 1. Assure adequate planning and execution of the Work by the Contractor.
 - 2. Assure coordination of the Work of the Contractor with other contractors, subcontractors and suppliers.
 - 3. Incorporate proper coordination of the work between Owner and the airlines/tenants.
 - 4. Assist the Contractor and the OAR in evaluating:
 - a. Contract performance relative to the Schedule Milestones as referenced in Section 01 11 00 - Summary of Work of this Contract
 - b. Monthly progress
 - c. Proposed Contract modifications
- B. The CPM shall include:
 - 1. Detailed CPM Diagram of all project activities, including procurement and delivery of major deliverables or field equipment, and subcontractor schedules.
 - 2. Work Breakdown Structure (WBS) as defined by project's Scope of Work
 - 3. Respective WBS assignment for each Activity
 - 4. Summary Bar Chart
 - 5. Resource loading
 - 6. Responsibility Code by Company
 - 7. Cost loading
 - a. Budgeted Cost
 - b. Cost to Date
- C. Provide a CPM schedule suitable for planning, scheduling and reporting the Work to be performed under the Contract. The Schedule shall be developed using the Owner's approved project planning software, Oracle-Primavera (current version or minimum version 6.2) the preferred software, with Primavera Contractor as an acceptable alternate. The principles and definitions of terms herein are as set forth in the Project Management Institute (PMI) publications, "A Guide to the Project Management Body of Knowledge (PMBOK) 5th Edition" (ISBN: 978-1-933589-67-9), "Practice Standard for Scheduling" (ISBN: 978-1-93069984-7) and "Practice Standard for Work Breakdown

Structures, Second edition" (ISBN: 978-1-933890-13-5). In the event of conflicts, the provisions of these articles shall govern.

- D. The schedule shall be cost loaded if the delivery order duration from NTP to Substantial Completion exceeds 6 months, the project budget exceeds \$1.5 Million, or if the OAR decides it is necessary for evaluating schedule performance.
 - 1. Cost can be loaded as either a lump sum non labor resource or a price per unit labor/material resource as appropriate and agreed upon by the OAR.
 - 2. The cost shall be broken down to align with the WBS level and loaded to match the SOV breakdown for the budget.
 - 3. General Requirements shall be loaded across a LOE activity and billed as required in the budget specifications.
 - 4. Period Cost and Cost to Date shall be coordinated between the Pay Applications and the construction activity progress.
 - 5. Cumulative amount of cost loaded Work activities shall equal total Contract award price.
 - 6. Change Orders/Modifications added to the schedule are cost loaded with corresponding cost, activity description, and logic.
 - 7. The Contractor shall include additional cost breakdown or information requested by the Owner at no additional costs.
- E. The Contractor shall use the following "Schedule/Level Calculation Options":
 - 1. When scheduling activities apply retained logic.
 - 2. Calculate start-to-start lag from early start.
 - 3. Define critical activities as Total Float less than or equal to zero.
 - 4. Show open-ends as non-critical.
 - 5. Calculate total float as Late Finish – Early Finish.
 - 6. Calendar for scheduling Relationship lag as 24 Hour
- F. The Contractor shall use the following Activity Assignments Calculations:
 - 1. Duration type is Fixed Duration and Units.
 - 2. Activity Type should be Task Dependent for "working" activities.
- G. The Contractor shall use the following Project Calculation and Settings:
 - 1. Link actual to date and actual this period.
 - 2. Link budget and Estimate at Completion (EAC) for non-progressed activities.
- H. Schedule Detail shall be broken down such that the activity duration is no longer than five (5) percent of the delivery order duration (Notice to Proceed to Substantial Completion) or 20 calendar days, whichever is shorter, and no activity exceeding 30 calendar days without the consent of the Project Controls OAR once subcontractor work is awarded.
- I. Activity descriptions shall follow the naming convention of "LOCATION –VERB NOUN". That is: a common Location ID followed by an action verb (i.e. DEMO, INSTALL, SET, etc.), followed by the item name (noun) requiring action.
- J. Work Breakdown Structure name shall contain only NOUNS of the respective deliverables. It shall follow the prescribed format as agreed to at the Preconstruction Kickoff meeting.
- K. Summary Bar Chart
 - 1. The Summary Bar Chart shall be based on the activity durations and logic indicated on the CPM Diagram.
 - 2. The Contractor and the OAR shall jointly select summary level activities.
 - 3. Each summary level activity shall include:
 - a. A concise description of the Work represented by the activity

- b. A time bar indicating planned/actual activity start and finish dates and actual cumulative percent complete at the end of each monthly reporting period.
 - c. A status line as of the end of the reporting period.
 - d. Major procurement items required to support the summary activity duration.
- 4. The Summary Bar Chart shall display all Contract milestones.
- L. Seasonal weather conditions shall be considered and included in the planning and scheduling via a "weather calendar" assigned to such affected activities for all work influenced by high or low ambient temperatures, precipitation and/or saturated soil to ensure completion of all Work within the Contract Time.
 - 1. Contract time extensions for abnormal weather will be granted in accordance with paragraph 1.10 only to the extent that the actual time lost during a particular month exceeds the average lost time indicated in the General Provisions. Time extensions granted for abnormal weather are not compensable.

1.4 SCHEDULE REPRESENTATIVE

- A. Within seven (7) calendar days after receipt of the Notice to Proceed (NTP) of the delivery order the Contractor shall designate in writing a schedule representative in the Contractor's organization who shall be responsible for coordinating with the Project Controls OAR during preparation and maintenance of the Schedule.
- B. The Contractor's schedule representative shall have complete authority to act for the Contractor in fulfilling the Schedule requirements of the Contract, and if such authority is interrupted during the Contract it shall be obtained in writing by the OAR. This scheduler cannot be replaced without the approval of the OAR.

1.5 INITIAL SCHEDULE SUBMITTAL

- A. The Contractor and major subcontractors shall meet with the Project Controls OAR at the time of the Preconstruction Kickoff meeting to jointly agree on guidelines, WBS, level of detail and summaries to be used in developing the Schedule. The contractor must prepare a Preliminary CPM Diagram for this meeting showing in detail the activities to be accomplished during the first 1/3 of the Construction Duration or 60 calendar days, whichever is less, as well as a preliminary level of detail for each WBS element for the remainder of the project duration.
- B. PROSECUTION AND PROGRESS – Refer to General Provisions.
- C. The CPM needs to include reasonable operational, seasonal, economic, facility or manpower restrictions required for sequencing of Work.
- D. The Contractor shall be responsible for assuring all work sequences are logical and the CPM shows a coordinated plan for complete performance of the Work. Failure of the Contractor to include any element of work required for performance of the Contract in the CPM shall not excuse the Contractor from completing all Work within the Contract Time.
- E. The CPM shall comply with the various limits imposed by the Scope of Work and by any contractually specified intermediate milestone dates and completion dates.
- F. The degree of detail shall be to the satisfaction of the Project Controls OAR and shall be sufficient to identify:
 - 1. The work breakdown structure of the project.
 - 2. Contract milestones and phasing
 - 3. The types of work to be performed by subcontractor and labor trades involved including the respective quantities and durations required for timely prosecution of stated work.

4. Submittal review, procurement, fabrication, delivery, installation and testing of major materials and equipment.
5. Access and availability to work areas.
6. Manpower, material, space and equipment constraints.
7. Delivery of Owner-furnished equipment as applicable.
8. Interfaces and dependencies with preceding, concurrent and following contractors

G. The approved Initial Schedule will become the Baseline Schedule.

1.6 THREE WEEK "ROLLING" SCHEDULE

- A. The Three Week Rolling Schedule shall be submitted weekly and shall be the basis of the weekly Contractor meetings.
- B. The Three Week Rolling Schedule shall be the actual detailed work plan used by the Contractor in meeting the Contract Schedule and Milestones.
- C. The basis of the Three Week Rolling Schedule shall be the Detailed CPM.
- D. The Three Week Rolling Schedule shall display at minimum:
 1. Activity Description
 2. Bar of Planned Activity Expected Duration and representative Dates
 3. Date Line for the current week and next two (2) following weeks
 4. Activity scope location (i.e., level, column line, etc.)
 5. Indicator for Action Items that require resolution before execution of the Activity can occur.
 6. Indicator of critical path items
 7. Any additional information the Contractor wishes to include to assist in the organization and understanding of the selected Activities.
- E. The Contractor shall prepare a written narrative status report of the project progress to accompany the Three Week Rolling Schedule. The reports shall be submitted to the Project Manager as part of the weekly Contractor meetings. Written status reports shall include but are not limited to:
 1. Status of major WBS elements.
 2. Progress made on critical activities indicated on CPM schedule.
 3. Explanations for any lack of work on critical path activities planned to be performed during last week and an explanation of how the project will be brought back on schedule.
 4. Explanations for any proposed schedule changes, including changes to logic or to activity durations.
 5. List of activities scheduled to be performed over the next 3 weeks.
 6. Status of major material and equipment procurement.
 7. Any delays encountered during reporting period.

1.7 MONTHLY PROJECT STATUS REPORTING AND UPDATING

- A. After the baseline schedule is approved, the Schedule shall be updated monthly or as otherwise stated in the delivery order until Project Completion. Entering of actual progress made through the end of the report period, including actual dates activities started and/or completed, the percentage of work completed, and estimated remaining duration for each activity in progress will be subject to approval of the OAR. The updated schedule will be submitted along with the current pay application for services / goods rendered. If requested by the OAR, the Contractor shall participate in monthly pre-

update conferences to verify progress and review modifications to the CPM Diagram prior to the formal monthly submittal.

- B. In case of disagreements concerning actual progress to date, the Owner's Authorized Representative's determination shall govern.
- C. The contractor shall update the CPM to reflect progress as of the end of the month or as stated in the delivery order as progressed in time, and reflect any approved schedule revisions.
- D. The updated Schedule shall be submitted in Primavera UNIFIER within seven (7) calendar days of the schedule status date, or with the corresponding Pay Application, and shall include the following:
 - 1. PDF of the Complete CPM Sorted by Early Start, Total Float, then by Remaining Duration Identifying the following:
 - a. Activity Identification
 - b. Activity Description
 - c. Original Duration
 - d. Remaining Duration (based on an estimate of the actual days remaining to complete the activity and not the quantity survey percent complete)
 - e. Early Start Date or Actual Start Date
 - f. Early Finish Date or Actual Finish Date
 - g. Total Float
 - 2. A PDF of the 90-day Look Ahead grouped by WBS Sorted by Early Start, Total Float, then by Remaining Duration
 - 3. A PDF of the 90-day Look Ahead Grouped by Responsibility Code (with page breaks), Sorted by Early Start, Total Float, then by Remaining Duration
 - 4. The .xer of the complete CPM (Primavera File).
 - 5. A narrative report
 - a. The Contractor shall explain all progress made during the period;
 - b. Status of critical Project components (percent complete, amount of time ahead or behind schedule) and an explanation of corrective actions taken or proposed to bring the project back on schedule if delays have occurred.
 - c. Plans for the forthcoming report period;
 - d. Status of major material and equipment procurement.
 - e. All variances and mitigation measures
 - f. Delaying factors / Problem areas, current and anticipated;
 - g. Identify and provide explanations for all schedule changes, including changes to logic or to activity durations.
 - h. Explanations for any lack of work on critical path activities planned to be performed during the last period.
 - i. Identify any changes to the critical path and the drivers for them.
 - j. Report indicating actual versus planned resource loading for each trade and each activity.
 - k. The Contractor may include any other information pertinent to status of project.
 - l. The Contractor shall include additional status information requested by the Owner at no additional costs.
- E. Status reports, and the information contained therein, shall not be construed as claims, notice of claims, notice of delay, or requests for changes or compensation.
- F. If the Contractor's monthly update of the Schedule reflects, or OAR determines, that the Contractor is at least ten percent (10%) or fourteen (14) or more calendar days behind

the approved baseline schedule for the project milestones, then the contractor shall submit with the monthly update of the Schedule, or within seven (7) calendar days of a written request from the OAR, his proposed plan for bringing the work back on schedule and completing the Work by the contract completion date(s) or calendar days as a Recovery Schedule.

1.8 SCHEDULE REVIEW AND APPROVAL

- A. Project Controls (OAR) and the Contractor shall meet within five (5) workdays of receipt of the Contractor's Initial Schedule Submittal for joint review of the proposed CPM. The Contractor shall revise any areas which, in the opinion of the Project Controls OAR, conflict with either the intent of this Section or the timely completion of the Project.
- B. In the event the Contractor fails to define any element of work activity or logic currently designed and the OAR review does not detect this omission or error, such omission or error, when discovered by the Contractor or OAR, shall be corrected by the Contractor at the next monthly Schedule Update.
- C. Within seven (7) calendar days after the joint review between the Contractor and the Project Controls OAR, the Contractor shall revise the Schedule in accordance with agreements reached during the joint review and submit the revised Schedule in the same form and detail as the Initial Schedule Submittal.
- D. Submittal of the Contractor's CPM Schedule will be a condition precedent to the making of any progress payments under the Contract.
 - 1. All or part of progress payments may be withheld for work performed during the first thirty (30) calendar days without a submittal of a Preliminary CPM.
 - 2. All or part of progress payments may be withheld for work performed during the subsequent progress periods without a submittal of an Updated CPM.
- E. Approval of the Schedule by the Project Controls OAR does not relieve the Contractor of any of its responsibility for the accuracy or feasibility of the Schedule. However, to the extent that the approved Schedule is reasonable, it becomes a part of this contract and defines the obligations of both the Contractor and the Owner to achieve a timely contract completion.
- F. In the event that the approved Schedule indicates the Contractor's plan to finish prior to the Contract completion date, the Contractor and the Owner may execute a Contract modification adjusting the Contract completion date to coincide with the Contractor's planned finish date at no expense to the Owner.

1.9 SCHEDULE REVISIONS

- A. Updating the Schedule to reflect actual progress to date shall not be considered a revision of the Schedule. All schedule revisions must follow the process prescribed for contract modification in the General Conditions.
- B. The Contractor shall revise the Schedule when one or more of the following conditions occur:
 - 1. When a change or delay significantly affects any specified intermediate milestone dates or completion dates.
 - 2. When the Contractor elects to change any sequence of activities affecting the critical path or to significantly change the previously approved work plan.
 - 3. When, in the opinion of the Project Controls OAR, the status of the work is such that the CPM and supporting analysis is no longer representative for planning and evaluation of the work.

- C. Submit any revised Schedule in the same form and detail as the initial submittal.
- D. The OAR must approve all Schedule revisions.

1.10 TIME IMPACT ANALYSIS FOR CONTRACT MODIFICATIONS, DELAYS, AND TIME EXTENSIONS

- A. When proposed Contract Modifications are initiated or delays are experienced, the Contractor shall submit to the Project Controls OAR a written Time Impact Analysis illustrating the influence of each change or delay on any specified intermediate milestone date and the current projected completion date as per the Project Change Management Plan.
 - 1. The Contractor shall notify the OAR within ten (10) calendar days after a delay occurs or notice of a change is given to the Contractor that may impact an intermediate milestone or the current projected completion date of the contracted Work.
 - 2. Each Time Impact Analysis shall include a fragment indicating all necessary logic, duration of impact, and demonstrate how the Contractor proposes to incorporate the change or delay into the current approved CPM Schedule.
 - 3. The event times used in the analysis shall be those included in the latest update of the detailed progress schedule or as adjusted by mutual agreement to reflect project status at the time the delay occurred or notification of the change was issued.
 - 4. The Analysis should include any additional supporting evidence that the Project Controls OAR deems necessary.
 - 5. Submit one (1) .pdf copy of the Time Impact Analysis in Primavera Unifier,
 - 6. Submit one (1) .xer of the impacted CPM schedule representing the impact calculations
 - 7. Submit one (1) narrative in the same form and detail as the monthly update identifying all steps taken to calculate the impact.
 - 8. Upon agreement by both parties, the influence of changes and delays shall be incorporated into the Schedule at the next monthly update.
 - 9. Where the Project Controls OAR has not yet made a final determination as to the amount of time extension, or the parties are unable to agree as to the amount of time extension to be reflected, the Contractor shall reflect that amount of time extension in the Schedule as the Project Controls OAR may determine to be appropriate for such interim purpose. It is understood and agreed that any such interim determination for the purpose of this paragraph shall not be binding upon either party for any other purpose and that, after the OAR has made a final determination as to any time extension, the Contractor shall revise the Schedule prepared thereafter in accordance with the final decision.
 - 10. It is understood and agreed that Schedule float time is not for the exclusive use of either the Owner or the Contractor. Extensions of time for performance under any and all of the provisions of this Contract will be granted only to the extent that equitable time adjustments for the activity or activities affected exceed the total float along the channels involved at the time a delay occurred or notification of a change was issued. It is expressly agreed and understood that the contractor shall not be entitled to any compensation or damages on account of potential delays which can be avoided by re-sequencing activity times or logic used to sequester float.

11. Time Impact Analyses related to Contract time extensions and/or Contract Modification work shall be incorporated into and attached to the applicable Contract Modification(s).

1.11 RESPONSIBILITY FOR COMPLETION

- A. The Contractor shall furnish sufficient forces, offices, facilities and equipment, and shall work such hours including night shift and overtime operations, as necessary to ensure the prosecution of the Work. If, in the opinion of the OAR, the Contractor, due to its own action, falls behind in meeting the Schedule, the Contractor shall take such steps as may be necessary to improve its progress, and the OAR may require the Contractor to increase the hours of work, the number of shifts, the amount of supervision, overtime operations and/or the amount of construction plant and equipment without additional cost to the Owner. The provisions of this section shall not be construed as prohibiting work on Saturdays, Sundays, and/or holidays, if the Contractor so elects and gives reasonable notice to the OAR. Work hours shall be within those stipulated in Section 01 11 00, Summary of Work and the Plans, or in the individual delivery order.
- B. The Contractor may improve its progress by performing sequential activities concurrently, by performing activities more quickly than planned, or by revising schedule logic to reflect a work around sequence. The Contractor may make minor logic changes, which are required to reflect actual work as it is performed, pertaining to out-of-sequence work. The minor logic changes shall be included in the monthly schedule narrative and incorporated into the CPM in the approved format.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for submittal of Shop Drawings, Coordination Drawings, Product Data and Samples, to verify that products, materials, and systems proposed for use comply with provisions of the Contract Documents.

1.2 SHOP DRAWINGS

A. Shop Drawing Requirements:

1. Present drawings in a clear and thorough manner. Title each drawing with the contract name and number, and delivery order name and number; identify each element of drawings by reference to sheet number and detail, schedule, or room number of contract documents.
2. Briefly and clearly identify field dimensions and field conditions; show relation to critical features, work, or adjacent products as applicable.
3. Shop drawings shall be of size and scale appropriate for their purpose and insofar as possible shall be uniform on size.
4. Shop drawings shall show design, materials (kind, thickness and finish), dimensions, connections, and other details necessary to ensure that they accurately interpret contract drawings and specifications and also show adjoining work in such detail as required to provide proper connection with same. Shop drawings shall not be reproductions of the contract Drawings.
5. Shop drawings shall be numbered consecutively. Retain numbering system throughout revisions.
6. Identification: All Shop drawings shall be identified with the name of the project, building or buildings for which shop drawings are being submitted. The project name and Airport Contract Number, delivery order number, Contractor's name, Subcontractor's name, date of submittal, drawing number, revision number, date of each revisions if any, as well as the specification section under which the work is to be performed and the contract drawing and detail numbers that relate to the shop drawings.
7. Check and coordinate shop drawings of section or trade with requirements of other sections or trades as related and as required for proper and complete installation of work.

B. Shop Drawings Submittal Procedures:

1. The Contractor shall submit shop drawings using the owner provided Program Management software application.

1.3 PRODUCT DATA

A. Product Data Requirements:

1. All product data in the form of manufacturer standard drawings, certificates, reports, catalog cuts, brochures, etc. shall be uploaded using the approved Program Management software application.
2. All product data shall be clearly labeled to identify pertinent products or models.
3. Product information should show performance characteristics and capacities, dimensions and clearances required, applicable wiring and piping diagrams and controls, and specified finish.
4. Product Data in the form of Manufacturer's Standard Schematic Drawings and Diagrams should be modified to delete information, which is not applicable to the Work and should be supplemented to provide information specifically applicable to the Work.

B. Product Data Submittal Procedures:

1. Product Data, Certificates, and Reports shall be uploaded using the approved Program Management software application.

1.4 SAMPLES

A. Sample Requirements:

1. Samples shall be submitted from the same source, which will supply the actual job. Provide samples of sufficient size to clearly illustrate quality, functional, finish characteristics of product, with integrally related parts and attachment devices and full range of color, texture and pattern
2. Where possible, all samples required for a particular specification section shall be submitted together. Manufactured products that generally degrade with time such as rubber, plastic, etc shall have a production / assembly date of no more than 18 months prior to installation / assembly on any Owner approved project.
3. In the event that a range of variations in texture, graining, color or other characteristics may be anticipated in furnished materials, assemblies, or elements of the work, a sufficient number of samples of such materials or products shall be submitted to indicate the full range of characteristics which will be present in the materials or products proposed for the work. Any such materials or products delivered or erected prior to approval of full range samples shall be subject to rejection.
4. Samples of materials or products, which are normally furnished in containers or packages, which bear descriptive labels or application or installation instructions, shall be submitted with such labels or instructions.

5. Identification: All samples shall be labeled, tagged, or otherwise clearly identified. Labels or tags shall set forth the name of the project, building or buildings for which the sample is being submitted, Contractor, Subcontractor, supplier, the name of the manufacturer, fabricator, or processor, the trade designation, grade and quality of the material or product, the date of submittal, and specific identification of each sample and a precise reference to the specification section and paragraph in which the material, product, or element of the work is specified. Each label or tag shall have sufficient clear space to permit the application of the approval stamps of the Contractor, and the Owner's Authorized Representative or Architect/Engineer.
6. Where appropriate, test data or manufacturers' certificates shall be referenced in and forwarded with the letter of transmittal. Samples without accompanying certificates or test data will be returned without action.

B. Samples Submittal Procedure

1. The Contractor shall submit three sets of each Sample required to the office or Site location designated by the Owner's Authorized Representative. Submit one additional sample for civil, landscape, structural, mechanical, electrical, baggage handling systems, and security/information technology/communications systems work.
2. Upon completion of review, the Architect/Engineer will return one sample of each set of samples to the Contractor.
3. Project Record Document Samples:
 - a. Items requiring submittal for color, texture or finish selection shall be included in Record Document Finish Manual required by Section 01 78 39, Project Record Documents.
 - b. Sample of selected color, texture or finish shall be provided on 4" x 4" sample chip, suitable for adhering to cardboard page in Record Document Manual.
 - c. Record sample shall match actual material installed.
 - d. Contractor shall prepare record samples, assemble on pages, and submit in accordance with requirements of Section 01 78 39, Project Record Documents.
 - e. Contractor shall submit two copies of Record Document Finish Manuals.

1.5 OWNER REVIEW

- A. The Owner's Authorized Representative or Architect/Engineer shall review the Contractor's submittals such as shop drawings, product data and samples, for conformance with the design, intent and specifications. During this phase, the Owner's Authorized Representative or Architect/Engineer shall review and provide appropriate action code response or take other appropriate action on the submittals and return the reviewed submittals to the Contractor within 14 calendar days of receipt. Dependent upon the complexity of the submittal, amount of review required, and number of concurrent submittals, the Owner's Authorized Representative or Architect/Engineer will attempt to return submittals within shorter time frames whenever possible.
- B. The Contractor shall submit shop drawings, products data, and samples sufficiently in advance of scheduled installation dates to allow for the 14 day submittal review time, including consideration for the possibility of submittal rejection.
- C. All submittals will be tracked using the approved Program Management software application.
- D. Owner review of submittals is only for conformance with design intent of Project and for compliance with information given in Contract Documents. Contractor is responsible for dimensions to be confirmed and correlated at job site, information that pertains solely to fabrication process or to techniques of construction and for coordination of work or all trades. Owner acceptance shall not relieve Contractor of responsibility for deviation from requirements of Contract Documents.
- E. Contractor's Responsibility:
 - 1. Acceptance of shop drawings, product data or samples shall not relieve the Contractor of responsibility for any deviation from the requirements of the contract Documents unless the Contractor has informed the Owner's Authorized Representative or Architect/Engineer, in writing, of such deviation at the time of submission and approval has been given within the approved Program Management software application to the specific deviation, nor shall approval relieve the Contractor from such responsibility for errors or omissions in the shop drawings, product data or samples.
 - 2. Acceptance of the Contractor's shop drawings and product data shall not relieve the Contractor of any responsibility, including responsibility for accuracy of dimensions and details, and for mutual agreement and conformity of its drawings with the contract drawings and specifications.
 - 3. Review all submittals prior to submitting them through the approved Program Management software application.
- F. Reviewer's Distribution and Approval:
 - 1. Following the Reviewer's review of each submittal, the Reviewer will comment on or approve the submittal using the approved Program Management software application.

G. Contractor's Distribution:

1. Contractor shall distribute approved submittals using the approved Program Management software application.

1.6 COORDINATION DRAWINGS

A. Coordination of Drawing Submittal Procedures:

1. Coordination drawings for each work area shall be submitted and approved before shop drawings are submitted. Shop Drawings submitted before Coordination Drawings have been approved will be returned without comment and marked 'NOT ACCEPTED'. Any resulting delays will be the responsibility of the Contractor.
2. Prepare coordination drawings to indicate how work shown by separate civil, structural, mechanical, electrical, baggage handling system, security/information technology/communications systems shop drawings shall be interfaced, intermeshed and sequenced for installation.
3. A minimum of three weeks before materials are fabricated or work begun, submit complete coordination drawings. Prepare using 1/4" minimum scale with congested areas and sections through shafts at 3/8" minimum scale. Submit total sieving, piping, ductwork, electrical wiring and lighting, plumbing, fire sprinkler, baggage handling system, security/information technology/communications systems and HVAC coordination drawings.
4. Contractor shall be responsible for coordination of Work. Every civil, structural, baggage handling system, security/information technology/communications systems, mechanical and electrical subcontractor shall be responsible for coordination of its portions of Work with Contractor and with each affected trade.
5. Hold coordination meeting with trades attending to coordinate Work of all trades for each work area. After coordination and corrections, each trade shall sign originals of coordination drawings. Submit coordination drawings to Architect/Engineer for review indicating all conflicts that could not be resolved in coordination meeting. After review and approval by Owner or Architect/Engineer, prepare shop drawings for each separate trade.
6. Coordinate with reflected ceiling plans exact location and dimensioning of exposed items, and items which occur within hung ceilings. In event of conflict, request clarification from Architect/Engineer and Owner's Authorized Representative as to correct locations of items in question prior to proceeding with fabrication or installation.
7. Prepare coordination drawings as follows:
 - a. Structural concrete and steel subcontractor(s) shall prepare originals indicating structural work, certify drawings with signature of authorized person, and forward to Contractor.
 - b. Civil subcontractor shall indicate civil work, including utility relocations, certify drawings with signature of authorized person, and forward to Contractor.

- c. Heating, ventilating and air conditioning subcontractor shall indicate heating, ventilating and air conditioning equipment, ductwork and piping, certify drawings with signature of authorized person, and forward to Contractor.
 - d. Plumbing subcontractor shall indicate plumbing lines and equipment, including fire protection system, certify drawings with signature of authorized person, and forward to Contractor.
 - e. Fire Sprinkler subcontractor shall indicate existing and new sprinkler piping, sprinkler heads, and specification sheets on sprinkler heads
 - f. Fire Alarm subcontractor shall indicate existing and new fire alarm components, fire alarm wiring to control panels and specifications audio and visual devices.
 - g. Electrical subcontractor shall indicate electrical equipment and conduit lines, certify drawings with signature of authorized person, and forward to Contractor.
 - h. Baggage Handling System subcontractor shall indicate system equipment and rights of way on certify drawings with signature of authorized person, and forward to Contractor.
 - i. Security/Information: The Technology/Communications subcontractor(s) shall indicate electrical equipment, raceways, and conduit lines, certify drawings with signature of authorized person and forward to Contractor.
- 8. Contractor shall resolve conflicts.
 - 9. Coordination drawings are for Architect/Engineer's and Contractor's use during construction and shall not be construed as replacing shop drawings or other Project Record Documents required by Contract Documents.
 - 10. Architect's review of coordination drawings shall not relieve Contractor from overall responsibility for coordination of work performed pursuant to Contract or from other requirements of Contract.
 - 11. Electronic media copies of CAD architectural or engineering data may be obtained from the Architect/Engineer upon approval of the Owner's Authorized Representative, for the express purpose of preparation of in-house coordination drawings or to use as the basis for preparing the contractor and subcontractor shop drawings by executing the required Release Form.
 - 12. Provision of this CAD data is subject to both the terms described in this Section and on the Release Form.
 - 13. Prepare composite shop drawings and installation layouts when necessary or requested to depict proposed solutions for field conditions. Coordinate in field and with affected subcontractors for proper relationship to work of other trades based on field conditions.

1.7 SCHEDULE OF SUBMITTALS

- A. The Contractor shall furnish the Owner's Authorized Representative with a schedule of submittals, within 30 days of receipt of the Notice to Proceed, or as stated in the delivery order. This schedule shall indicate, by technical specification section, the items to be submitted, the anticipated item submittal date, and the approximate number of shop drawing sheets (when applicable) to be included in the submittal.
- B. Large and complex submittals may exceed the 14 day review period as specified in "Owner Review" in this Section. The Architect/Engineer shall identify these submittals (exceptions) upon receipt of the submittal schedule received from the Contractor.

2.1 GENERAL SUBMITTAL PROCEDURES

- A. Make submittals promptly in accordance with approved schedule and in such sequence as to cause no delay in Work. Only the Contractor shall submit submittals to Architect/Engineer. Contractor shall make submittals using the approved Program Management software application.
- B. Submit and upload shop drawings, product data and samples for structural, mechanical, fire protection and fire alarm systems, electrical, baggage handling systems, and security/information, technology/communications systems work using the approved Program Management software application.
- C. All submittals shall be made with a letter of transmittal contained within the approved Program Management software application.
- D. All deviations from Contract Documents requirements shall be noted by the contractor on the submittal with a detailed description of each deviation. This does not relieve the Contractor from complying with the Substitutions requirements on Section 01 25 13 - Product Substitution Procedures, of the Contract Documents.
- E. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by Architect/Engineer's review of submittals unless Architect/Engineer gives specific written acceptance of specific deviations.

PART 3 EXECUTION

3.1 CONTRACTOR REVIEW

- A. Review submittals prior to transmittal; determine and verify field measurements, field construction criteria, manufacturer's catalog numbers, and conformance of submittal with requirements of contract documents.
- B. Coordinate submittals with requirements of Work and of Contract Documents.
- C. Apply the Contractor's stamp, sign and stamp cover sheet of shop drawings, stamp cover sheet for product data, and each sample label to certify compliance with requirements of contract documents. Stamped submittals must be uploaded using the owner approved Program Management software application and any deviations from requirements of contract documents must be noted.
- D. Fabrication of products or beginning work prior to the return of approved submittals is at the risk of the Contractor.

- E. Submittals without Contractor's stamp and submittals which are incomplete, contain numerous errors, or have not been checked or have only been checked superficially, will be returned without comments. Any resulting delays shall be Contractor's responsibility.
- F. Contractor shall be responsible for quantities and dimensions shown on submittals taken from Contract Drawings.

3.2 RE-SUBMITTALS

- A. Make re-submittals under procedures specified for initial submittals; identify changes made since previous submittal.
- B. Shop Drawings and Product Data:
 - 1. Revise initial drawings or data, and resubmit as specified for initial submittal.
 - 2. Indicate changes which have been made other than those requested by the Architect/Engineer
 - 3. Mark number of submission and resubmit until accepted.
- C. Samples: Submit new samples as required for initial submittal. Remove samples, which are not accepted or designated "RESUBMIT".

- END OF SECTION -

PART 1 GENERAL

1.1 SUMMARY

- A. This section covers handling clean soil generated during the project. Stockpile management procedures and practices are designed to reduce or eliminate air and storm water pollution from stockpiles of clean soil.
- B. Clean soil stockpile will be managed by DFW DCC.

1.2 RELATED SECTIONS

- A. Section 01 55 29, Staging Area.
- B. Section 01 57 23, Temporary Storm Water Pollution Control.
- C. Section 01 74 19, Construction Waste Management and Disposal.
- D. Section 01 74 19.13, Waste Characterization.

1.3 SUBMITTALS

- A. Submit a Soil Screening Plan to the Construction Manager (CM) at least 15 days before starting Work.
- B. Submit a Contaminated Soil Contingency Plan to the CM at least 15 days before starting Work.
- C. Submit to the CM copies of all field-screening results, laboratory analyses, soil transfer forms and any other documents required by the CM concerning the disposition of the excavated soils from this project.

1.4 REFERENCES

- A. The following is a list of policies and regulations which may be referenced in this Section:
 - 1. U.S. Code of Federal Regulations (CFR):
 - a. Title 40 Part 50, National Primary and Secondary Ambient Air Quality Standards.
 - b. Title 40 Part 131, Water Quality Standards.
 - 2. Texas Administrative Code (TAC): Title 30 Chapter 335, Industrial Solid Waste and Municipal Hazardous Waste.
 - 3. DFW Airport Procedure No. AM-32: Management of Uncontaminated Soil Transfer.

1.5 DEFINITIONS

- A. CM: DFW Airport Construction Manager.
- B. EAD: DFW Airport Environmental Affairs Department.

C. PM: DFW Airport Project Manager

1.6 QUALITY ASSURANCE

- A. Environmental construction oversight shall be performed during construction activities by persons possessing sufficient training and experience necessary to conduct the required soil screening, having the ability to recognize environmental conditions, and trained in the calibration and use of field instrumentation.

1.7 SOIL MANAGEMENT PLAN

- A. Plan shall identify field-screening methods and frequencies to determine if possible contaminants are present in the soil. Plan shall provide the screening techniques and instruments to be used, contaminants to be screened for, levels at which soils are considered possibly impacted and the planned documentation of the field-screening and calibrations.
- B. Plan shall include details regarding changes in construction methods and techniques to be incorporated when environmental conditions change or contaminants are encountered where none were suspected.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 SOIL SCREENING

- A. Due to the possibility of the identified contaminants to be present in the soils, field-screening of the soils will be conducted in accordance with the soil management plan.
- B. All soils at the project location will be field screened using an appropriate field screening method based on possible contaminants present.
- C. Any soil that exceeds the appropriate field screening criteria will be transported to triage, then be stored on plastic, covered with plastic and hay bales around the stockpile pending laboratory results. Soils from VCP areas are not allowed to leave the location of generation and will require onsite storage description.
- D. Soil samples will be collected in accordance with the Soil Management Plan (Sampling/Screening Section).
- E. Once analysis is complete, arrange for management and/or disposal of contaminated soils based on the analytical results and the concurrence and approval of EAD.
- F. Triage soil tested clean will be transported to the clean soil stockpile.

3.2 SOIL REUSE

- A. Excavated soils with no evidence of contamination can be managed as clean and reused on site.
- B. Excavated soils having field-screening levels less than the predetermined impacted level can be reused on site.
- C. Excess clean soil shall be transported to a DFW Airport clean soil stockpile. The transfer of the soil shall be approved by the appropriate soil stockpile person and documented using the Soil Stockpile Permit. One Stockpile Permit shall be submitted for each project.
- D. Excavated soils that exhibit visual or olfactory evidence of possible contamination and soils exceeding the predetermined impacted level shall be sampled for laboratory analyses. The laboratory methods and disposal option levels will be provided by EAD.
- E. Soils stored on the project site shall be protected from wind, precipitation and possible impacts to storm water in accordance with Section 01563, Erosion Controls.
- F. Transport excess clean soils to the appropriate DFW Airport clean soil stockpile. The soil must be free of debris. Trucks with construction debris will be returned to the project site for debris removal.

3.3 SUPPLEMENTS

- A. The supplement(s) listed below, following "End of Section," is a part of this Specification:
 - 1. Soil Stockpile Permit
 - 2. Stockpile Procedures

END OF SECTION

Clean Soil Stockpile Procedures

Update: 9/22/2005

- Stockpile Permit must be completed and approved by EAD before any soil is accepted
- EAD accepts excess clean construction soil from Airport Board and Tennant projects only
- Projects planning to stockpile clean excess soil must state so in their soil management plan
- Additional screening, if required, must be completed prior to hauling
- Contractors must coordinate dates and times with DCC to ensure that an approved stockpile location will be available (please give at least 24 hrs advanced notice)
- DCC will only accept clean soil that is free of debris (concrete, trash, re-bar, pipe, etc.)
- Trucks hauling soil must use an effective tarp mechanism
- Trucks hauling soil containing debris or without tarps will not be admitted
- It is the responsibility of the contractor to remove any debris or trash that is dumped at the stockpile
- It is the responsibility of the contractor to remove any mud or dirt that is tracked onto any public road as a result of construction activity
- An Owner's Authorized Representative will be on-site at all times during stockpile operations
- DCC will be responsible for soil spreading and packing
- Large projects may be required to use trip tickets in order to keep a record of all truckloads received/removed
- DCC or EAD may close the stockpile at any time if the above stated rules and procedures are not being followed

Environmental Affairs

Soil Manager

(972) 973-5584

Fax

(972) 973-5561

Document Title: CLEAN SOIL MANAGEMENT**Section: 01 33 29.06.01**

Stockpile Permit	
CA#:	Project Title:
Generator Use	
Location of Construction (Address or Map Grid):	
Brief description of construction activity:	
Contractor or Company Name:	
Main Contact (Name and Title)	
Phone:	
Material (check all that apply): <input type="checkbox"/> Topsoil <input type="checkbox"/> Construction Soil <input type="checkbox"/> Shale <input type="checkbox"/> Other	Quantity of Material:
	Dates of Construction:
Transporter	
Company Name:	Primary Contact:
	Phone:
DFW Board Project Manager Approval	
Print:	Sign:
Date:	Time:
DCC	
Stockpile Manager: Anthony Andrews	Phone: 972-973-1864
Field Screening Methodology:	Results:
Destination:	
EAD Approval:	
Print:	Date:
Signature:	Comments:

PART 1 – GENERAL

1.1 AOA PROCEDURES

- A. These Procedures specify requirements and limitations imposed on construction and maintenance activity within the Aircraft Operations Area (AOA), the purpose of which is to ensure the safe and efficient operation of the Airport while providing maximum allowable flexibility for personnel. Any deviation from the procedures as stated herein constitutes a violation and shall be subject to enforcement in accordance with Article 1.14 ENFORCEMENT OF AOA PROCEDURES.
- B. Construction projects at the Airport are reviewed through conferences prior to the start of work to establish the parameters within which the work can be performed.
- C. Construction projects within the Security Identification Display Area (SIDA)/AOA require that personnel display appropriate Airport Access/Identification Badges issued in accordance with Article 1.11 AIRPORT IDENTIFICATION/ACCESS BADGE.
- D. Motor vehicles entering the AOA must display an AOA Access permit and be in compliance with Article 1.12 AIR OPERATIONS AREA (AOA) ACCESS PERMIT.
- E. Construction projects that take place in the public areas of terminal concourses (sterile area) to include “back of house” areas such as offices and concessions within the Security Identification Display Area/Air Operations Area (SIDA/AOA) require a tool management plan in accordance with Article 1.17 CONSTRUCTION SECURITY PROCEDURES TOOL – MANAGEMENT PLAN.
- F. Prior to beginning a project, the Contractor shall submit to Owner's Authorized Representative and the Airport Board's Department of Public Safety (DPS) a security plan that describes how the Contractor intends to provide for the security of the construction site, Contractor staging area, and property throughout the duration of the project.
- G. The Contractor is responsible for ensuring that these procedures are followed. Any exceptions require specific authorization by the Airport's Operations Department and DPS on a case-by-case basis.
- H. Disruption of underground utility services on the airport can cause degradation of aviation safety, and wide spread loss of the use of airport facilities and or services. Procedures concerning underground utilities location and protection are located in Section 01 71 33, Protection of Adjacent Construction, and shall be adhered to at all times.
- I. Progress meetings are to be held weekly unless otherwise stated in Contract Documents, in order to discuss schedules, planned closures, safety and security issues, and other related matters.

- J. The Contractor is required to conduct daily safety briefings with all workers who will access AOA construction sites and include topics relevant to these rules and regulations and the activities being performed. Discuss specific project movement restrictions as well as general AOA safety procedures and guidelines. Follow the safety meeting agenda provided by the Owner's Authorized Representative. The meeting will be conducted both in English and Spanish when the size of the worker population requires bilingual communications, and will be attended by all Contractor and subcontractor personnel working inside the AOA that day. The Contractor shall record meeting attendance, including attendees' names and employers, and shall provide a copy of the attendance sheet to the Owner's Authorized Representative. Failure by the Contractor or subcontractor personnel to attend these mandatory meetings could result in AOA access being denied to those individuals.
- K. The Contractor's designated Quality Control representative will conduct an "AOA Readiness Checklist" review with all personnel prior to crews entering the AOA.
 - 1. The AOA Readiness Checklist is to be provided by the Owners authorized representation (OAR) upon completion. The purpose of the checklist is to ensure that all personnel entering the AOA understand the limits of the designated work area, have all tools, materials, and equipment necessary to complete the planned activities, and have verified the operability of all powered equipment and hand tools prior to entering the AOA.
 - 2. The intent of this checklist is to reduce or eliminate superfluous travel to and from the work site due to Contractor's lack of initial readiness. The Owner's Authorized Representative will not call for Operations escort until the checklist review is complete.
- L. Prior to the start of any project on the AOA, the Contractor, through the Owner's Authorized Representative, shall prepare and submit a Contractor Emergency Response Plan and provide the plan to the Airport Operations Center (AOC).
- M. Project management including the Contractor's designated Safety Officer must be on duty at the Airport whenever the Contractor is performing work on the AOA.
- N. The Contractor shall document the condition of the work site and access roads to it prior to start of construction, and restore the area to original (or better) condition when area is no longer marked as a construction site. This requirement does not apply to attaining a stand of grass as long as grass has been planted.

1.2 FORMS AND INSTRUCTIONS

- A. The following forms and instructions have been included for Contractor's use, as applicable:
 - 1. AOA Readiness Checklist
 - 2. AOA Construction Escort Release/Pick up Point Instruction Sheet
 - 3. Tool Management Plan
 - 4. Lockout procedure for Airfield Series Lighting
 - 5. Lockout Log
 - 6. Airfield Closure/Activity/ Circuit Lockout Request.
 - a. Form attached

- b. Instructions for filing form
- 7. Contractor's Application for Access Card or Key(s)
 - a. Form attached
 - b. Access card/keys Rules and Regulations

1.3 CONSTRUCTION - NON-MOVEMENT AREAS

- A. When construction activity is being performed within the Non-Movement Area of the AOA (aprons, etc.), the procedures established for the movement area generally apply unless otherwise authorized by Airfield Operations with the following exceptions:
 - 1. Unescorted access through Terminal Security Gates is limited to those persons displaying a valid Airport Identification/Access Badge encoded with "terminal gate access" authorization. The term "Terminal gate access" is defined as any badge holder whose badge has been encoded to grant access through security gate checkpoints within passenger terminals. Those badge holders who do not have terminal gate access privileges encoded in their badge must be escorted by someone who has terminal access privileges.
 - 2. The maximum ratio for escorting individuals within the CTA will be one AOA badged individual to five non-badge individuals. Non-badged individuals must remain within sight and sound of the escort at all times and be under the control of the badged escort individual at all times.
 - 3. The Owners Authorized Representative will provide notification to and obtain approval from Airfield Operations before allowing the Contractor to enter the AOA and proceeding into the construction site. The Owners Authorized Representative will again notify Airfield Operations when the construction activity has been cleared of all personnel.

1.4 CONSTRUCTION - AIRCRAFT MOVEMENT AREA

- A. When construction is being performed within the Aircraft Movement Area, the following procedures will apply:
 - 1. The Owners Authorized Representative will provide notification to and obtain approval from Airfield Operations before entering the AOA.
 - 2. Approval to enter closed areas within the Movement Area must be obtained from Airfield Operations Port Control.
 - 3. A log of each vehicle entering and exiting the closed area shall be maintained by Port Control or his/her designee.
 - 4. Contractors are required to obtain approval to clear a work site which must be compliant with these rules and regulations.

B. Vehicle Operator - Escort Requirements

1. At least one supervisor with a valid AOA Access/Identification Badge must escort any individual or group of non-badged persons.
2. The proximity of the badged person to non-badged person(s) must be such that they remain in clear site of each other at all times and the badged person is in control of others by voice and motion.
3. At a minimum, the Project Manager, Quality Control Representative, Safety Officer, and all Superintendents, foremen and lead men will be badged. However, in no instances will the ratio of non-badged employees to badged employees exceed 5 to 1.
4. Each vehicle operator must be currently licensed as required by the State of Texas, possess valid insurance coverage as required by the Airport, possess a valid Airport Access/Identification Badge, and be thoroughly familiar with the provisions of this Section. An authorized person must escort all other vehicle operators at all times.
5. Vehicle operators must have the ability to communication via radio or phone with project management and each vehicle must possess a map of the project site with detailed depictions of AOA entrance/exit points, haul routes, restricted areas, and other vital information.
6. Dedicated escort requirements must be coordinated with Airfield Operations in advance through the Owner's Authorized Representative.
7. Airfield Operations employee will arrive at location to begin an escort.
8. Airfield Operations employee will get out of his/her vehicle and meet with all personnel who will be under their escort and will pass out laminated Release/Pick-Up Point Escort Instruction sheets to the operator of each vehicle to be escorted.
9. Airfield Operations employee will ensure there is at least one badged person for every five non-badged persons.
10. The escort shall verbally instruct each vehicle operator to follow the escort vehicle at all times, and as closely as considerations of safety will permit, until the vehicles are released from the escort at the Release/Pickup Point preferably located at least 50' inside of the construction work area. Contractor shall be responsible for the materials and maintenance of the Release/Pickup Point.
11. An Airfield Operations employee will then escort the vehicles to the Release Point within the construction work area.
12. Upon arrival at the construction work area Release Point, the Airfield Operations employee will drive around it and verify that all vehicles have arrived there.
13. After the Airfield Operations employee has verified that all escorted vehicles have arrived, all escorted vehicles will be directed to stop and their drivers to return the laminated escort instruction sheets back to the Airfield Operations employee.

14. Same procedure will apply for escorting vehicles out of the construction work area to an AOA gate.
15. Airfield Operations personnel will not terminate the escort or release any escorted party except at a designated Release Point. For example, Airfield Operations personnel shall not release the vehicle(s) being escorted outside of a cone line established for a closure and allow the vehicles to drive past the cone line into the work area unescorted. Airfield Operations personnel will perform the escort past the cone line into the construction work area.
16. Airfield Operations will release the escort at the designated Release Point, ensuring all vehicles being escorted follow the escort vehicle past the established cone line and inside to their work area.
17. Escorts performed to construction work areas on the AOA in which a closure of a taxiway or runway is not in effect and an established Release Point is not being used will be conducted in a manner that the vehicles will be released at the designated point agreed to by the person performing the escort and the person being escorted. The release of the escort will be agreed to at the verbal briefing performed prior to the escort getting underway.
18. Dedicated escort requirements must be coordinated with Airfield Operations in advance through the Owner's Authorized Representative.
19. Contractors may perform escorts only along established Haul Routes provided the following procedures are adhered to:
 - a. The vehicle operator displays a valid Airport Identification / Access Badge.
 - b. The vehicle displays a valid AOA Access Permit.
 - c. The vehicle is clearly marked with a three-foot square orange and white checkered flag and/or a 360-degree rotating or flashing yellow light.
 - d. Supervisor vehicles shall have a rotating or flashing yellow light that operates continuously flashing 75 + or - 15 times per minute with peak intensity between 4 and 40 candelas.

NOTE: Only authorized Airport Board and FAA personnel or their assigned agents may perform escorts off established haul routes or outside of established construction sites.

1.5 HAUL ROUTES

- A. Airfield Operations must approve the establishment of contractor haul routes. Prior to approving haul route activities, the following must be established:
 1. Green flags or markers, not to be smaller than 6 inches square mounted on wooden stakes no higher than 18 inches above the ground, must prominently mark each side of the haul route at intervals of not more than 100 feet apart.
 2. Stop signs (30 in. x 30 in.), or other traffic control devices, conforming to the "Texas Manual of Uniform Traffic Control Devices" (TMUTCD), must be clearly posted on either side of intersecting roadways, emergency roads,

taxiways and other areas specified by the Airfield Operations. Signs must normally be no nearer than 160 feet from the taxiway centerline or 60 ft. from the emergency road centerline.

3. In some cases, traffic control signal lights may be required for controlling taxiway crossings. When they are used, they shall have either 8 inch or 12 inch circular red and green lenses, and shall normally be located a minimum of 160 feet from the taxiway centerlines and between 2 and 10 feet from the outside edge of the haul road surface. Their height shall be no less than 9 feet or more than 15 feet above the haul road surface. Approval for use of traffic control signal lights will be approved on a case by case basis only by Airfield Operation.
4. Flag people, wearing bright reflective outer clothing, shall be posted at each crossing to control haul route traffic either through flags or traffic signals. A flag person may not be allowed to perform any other function and must be able to speak and understand English.
5. Paved areas must be kept clean at all times.
6. All vehicles shall stop at each taxiway and/or emergency road before crossing to ensure the route is clear.
7. Construction vehicles must yield right-of-way to all Airport vehicles and aircraft at all times.
8. Hauling operations will be discontinued at the direction of Airfield Operations when the operation of the airfield warrants due to inclement weather or other conditions affecting aircraft movement.
9. Provide wheel wash stations for the removal of mud from trucks and other vehicles at the following locations:
 - a. Prior to entry onto public thoroughfares.
 - b. Prior to crossing airport roadways, ramps, taxiways and runways.

Note: If the Contractor can successfully exhibit his ability to keep the paved areas, listed above, clean, the Owner's Authorized Representative may waive the requirement for wheel wash stations.

1.6 CLOSING AIRFIELD AREAS

- A. No portion of the airfield may be closed to aircraft or vehicles without specific authorization from Airfield Operations. Any construction activity that affects the utilization of roadways, taxiways, runways, Nav aids, or associated electrical circuits must be prearranged and scheduled in accordance with contract documents, and specific approval granted by Airfield Operations. The lockout Procedure for Airfield Series Lighting Circuits is explained in attachments.
- B. The following activities are considered an impact to airfield areas and require closures:
 1. Obstruction of any roadway or emergency access road.
 2. Objects, excavations, men or material within:
 - a. 250 feet from runway centerline (200 feet if approved by Airfield Operations)

- b. 1000 feet off end of runway
 - c. 160 feet from taxiway centerline
 - d. 138 feet from taxilane centerline
 - e. Within NAVAID critical areas
- C. Initial notification of intended airfield closures should be prearranged no less than 30 days in advance, except where noted otherwise within Airport contract documents and specifications or as granted by Airfield Operations on a case-by-case basis.
- D. In order to enable proper coordination of airfield activities, a description of all AOA activity and planned closures must be telefaxed or e-mailed to the Coordination Center by 11:00 a.m. of the morning preceding nighttime closures (7:00 p.m. to 7:00 a.m.) and/or the following day's daytime closures (7:00 a.m. to 7:00 p.m.). For closures on a holiday, daytime on the day following a holiday, Saturday, Sunday and daytime on Monday, the request must arrive at the Coordination Center by 11:00 a.m. on the last workday prior to the holiday or weekend. The Contractor will use the Airfield Closure/Activity/Circuit Lockout Request form (Attachment 2) processing the form through his/her Owner's Authorized Representative in time to meet the requirement to get the request to the Coordination Center by 11:00 a.m. Notification of cancellation of scheduled closures should be made to the Coordination Center by the most expeditious means available.
- E. Airfield Operations reserves the right to refuse any closure due to unforeseen conditions that may require continued utilization of the area for aircraft operations. These conditions include, but may not be limited to:
 - 1. Inclement weather/low visibility conditions.
 - 2. Delayed aircraft operations
 - 3. Closures of higher priority (e.g. urgent maintenance activities).
 - 4. Emergency situations.
- F. Runway closures require the placement of lighted "X's" at each end of the runway if personnel or equipment will be on the runway at any time.
- G. On runways with intersection departures, the placement of cones or barricades (edge of grass to edge of grass) with reflective tape and red flashing lights placed across the closed runway to prevent inadvertent departures from the intersection will be directed by Airfield Operations. Closures require the placement of cones or barricades (edge of grass to edge of grass) with reflective tape and red flashing lights placed across closed taxiways. Airfield Operations can require the contractor to modify the locations of the lighted cones from what may be shown on contract drawings if in their opinion such modification is necessary due to aircraft utilization of the airport.
- H. For work that requires any runway closure, required construction equipment, materials, etc. shall be mustered on-site or at a designated area approved by the Owner's Authorized Representative prior to the execution of a runway closure. Prior to a runway closure, the Contractor may also be required to demonstrate the good working order of his equipment, availability of materials if off-site, adequacy of material quantities on-hand, or any other factors which might delay the Contractor's

work and subsequent reopening of the closed runway to the satisfaction of the Owner's Authorized Representative and/or Airfield Operations.

- I. All areas closed to aircraft operations must be prominently marked and lighted in accordance with these standards, or as directed by Airfield Operations or Owner's Authorized Representative. No construction activities will be allowed to begin prior to completion of all marking and lighting requirements.

1.7 MARKING AND LIGHTING

- A. All construction equipment must be marked by a 3-foot square orange and white checkered flag or an amber rotating or flashing beacon. Supervisory and escort vehicles must display a 360-degree amber rotating or flashing beacon. For nighttime construction, certain other vehicles, cranes and pieces of construction equipment may require lighting as directed by Airfield Operations.
- B. All excavations and closed areas on the AOA must be prominently marked and lighted with red flashing lights (cones with lights shall not to exceed 10-ft. spacing) or as directed by Airfield Operations and Owner's Authorized Representative.
- C. Spacing of cones and lights shall not exceed 10 foot on center and must extend from edge of grass to edge of grass or across entire paved surface of closed area.
- D. No construction activities will be allowed to end before all excavations have been marked and lighted as required.
- E. Excavations adjacent to full strength taxiway pavement of an active taxiway or excavations within a taxiway safety area shall be marked with collapsible barricades marked with diagonal, alternating orange and white stripes; each barricade attached or joined together with two flashing red lights on each end. All barricades, temporary markers, and other objects placed and left in safety areas associated with any open, taxiway, or taxilane must be as low as possible to the ground; of low mass; easily collapsible upon contact with an aircraft or any of its components; and weighted or sturdily attached to the surface to prevent displacement from prop wash, jet blast, wing vortex, or other surface wind currents. If affixed to the surface, they must be frangible at grade level or as low as possible, but not to exceed 3 inches (7.6cm) above the ground. Do not use nonfrangible hazard markings, such as concrete barriers and/or metal-drum-type barricades, in aircraft movement areas. Do not use railroad ties on runways.
- F. Excavations within the non-movement areas shall be marked with collapsible barricades marked with diagonal, alternating orange and white stripes; each barricade attached or joined together with two flashing red lights on each end.
 1. Excavations within 10 ft. of emergency roads shall be marked with lighted Type A barricades or DFW Airport Compliance approved traffic control devices.

- G. Orange construction fencing will be used around excavations for the safety of construction workers and to mark the boundaries of the construction site in accordance with the following:
 - 1. Plastic construction fencing shall not be utilized within a runway or taxiway safety area, within 100 ft. of a taxilane centerline or any other area where jet blast could be a problem.
 - 2. Approval of the material by the Owner's Authorized Representative is required before using construction fencing on the AOA.
 - 3. When used on the AOA, plastic construction fencing must be secured to wooden posts (maximum of 2" x 2") or some similar frangible support and be no higher than four (4) feet above ground level (three feet when permitted within Taxiway/Taxilane OFAs).
 - 4. Construction fencing and supports must be kept in a satisfactory condition (all supports in place, material securely attached to the supports and no tears in the material).
 - 5. The use of construction fencing is no substitute for prominently marking and lighting an excavation.
 - 6. When used to mark the boundaries of the construction site, the wooden post shall have a white reflective marker at the top of the post that is visible from outside the construction site.
- H. Barricades, cones and/or construction fence shall be removed when directed by the Owner's Authorized Representative or when the requirement for marking of hazardous areas no longer exists.
- I. Release/Pick Up Point markings shall consist of 3 foot square black and white checkered flag located within a group of 5 orange cones with amber lights placed 50' inside of the closed area
- J. All marking, lighting, signs, flags, cones, barricades, and other safety related devices shall be maintained to 100% serviceability at all times.

1.8 SAFETY AREAS

- 1. Safety areas are surfaces surrounding runways and taxiways in which no potentially hazardous ruts, humps, depressions, or other surface variations (in excess of 3 inches) may exist. Surface conditions must be capable under dry conditions of supporting aircraft rescue (ARFF) vehicles and other heavy equipment, and supporting the occasional passage of aircraft without causing major damage to the aircraft.
- 2. Safety area dimensions are as follows:
 - a. Runways: 250 feet (200 feet if approved by Airfield Operations) either side of centerline, 1000 feet off each end.
 - b. Taxiways: 100 feet either side of centerline.
- 3. The Contractor may be required to immediately terminate his work within Runway Safety Areas at the instructions of the Owner's Authorized Representative or Airfield Operations. Work may be performed outside Runway safety areas without closure as long as weather minimums are not less than 1000-foot ceiling and/or 3 miles visibility.

1.9 Obstacle Free Zone (OFZ)

1. OFZ's are three-dimensional areas involving imaginary surfaces in the vicinity of runways. Objects, vehicles, and stockpiled material will not be permitted to penetrate an OFZ whenever the weather conditions are below an 800-foot ceiling or less than two miles visibility and aircraft are using an Instrument Landing System (ILS) approach.
2. OFZ surfaces are as follows:
 - a. Inner-transitional surface OFZ begins at 200 feet from runway centerline, rises vertically to an elevation of 39 feet above the runway elevation, and then slopes 6:1 to a height of 150 feet above the established airport elevation. (For Category II/III runways, it rises vertically to an elevation of 23 feet above the runway elevation and then slopes 5:1 for a distance of 657 feet from the runway centerline, then slopes 6:1 to 150 feet above the established airport elevation.)
 - b. Inner-approach OFZ begins 200 feet from the runway threshold at the same elevation as the runway threshold and ends 200 feet beyond the last approach light unit. Its width is 400 feet and it rises at a slope of 50:1.
 - c. Objects that do not penetrate the OFZ may still require approval by Airport Operations based on the requirements contained in Federal Aviation Regulation Part 77.

B. Object Free Area (OFA)

1. Object Free Areas are two-dimensional areas surrounding taxiways and taxilanes within which no object may be located that is not completely mobile and capable of clearing the OFA for each passing aircraft. EXCEPTION: Airport Approved objects such as barricades, markers, flags, and lights used to define excavations are allowed to remain within the OFA.
2. Normal OFA dimensions are as follows:
 - a. Taxiways - 160 feet from centerline.
 - b. Taxilanes - 138 feet from centerline.
3. Airfield Operations must authorize construction activities within OFA's in advance.
4. No stationary objects will be allowed to remain within taxiway/taxilane OFA above barricade height or 18"; whichever is less (except for orange construction fence). All other objects must be mobile and pulled back while the taxiway/taxilane is active.
5. Mobile equipment may operate within the OFA provided it is properly marked and lighted, and a flag person is used to signal the pullback of all persons and equipment for each passing aircraft. A flag person may not be allowed to perform any other function.
6. Using "pull back" procedures when working within taxiways' OFA during nighttime hours is prohibited unless the area of work has sufficient light in the opinion of Airfield Operations. Sufficient light may include artificial light that is either existing or supplied by the Contractor. If it is chosen to bring in

additional artificial light for the work area, a layout plan shall be submitted to Airfield Operations for approval. At a minimum, the plan shall show the type(s) of light, the location of light(s) and whether or not the light(s) will be shielded. Airfield Operations may require additional information to determine the impact of construction lights on airfield operations.

Exception: No activities will be allowed within 160 feet of a High Speed Exit Taxiway unless that HSE Taxiway is closed.

C. NAVAID Critical Areas (NCA)

1. Work will not be authorized within NCA's without specific approval by Airfield Operations.
2. NCA's include runway ILS NAVAIDS and microwave signal paths.

D. Criteria for Marking Construction Sites, Safety Areas, Object-Free Areas, and NAVAID Critical Areas

1. White markers or flags are used to prominently mark the boundaries of construction sites when such marking is determined to be feasible. Alternatively, orange construction fence may be used for this purpose in accordance with Article 1.3E2b6 above.
2. Red markers or flags must prominently mark the boundary of Runway Safety Areas and NAVAID Critical Areas.
3. Yellow markers or flags must prominently mark Object Free Areas (400 feet* from a runway centerline, 160 feet from a taxiway centerline, and 138 feet from a taxilane centerline). NOTE: Construction activities are subject to being terminated whenever visibility is at or below 3/4 mile, except as approved on a case-by-case basis.
4. All markers/flags must be made of reflective material and be no smaller than 6 inches square mounted on 2x2 wooden stakes no higher than 18 inches above the ground. Each marker must be placed no further apart than 100 feet and extend to the limits of the construction site. NOTE: Airfield Operations on a case-by-case basis may grant Exceptions.
5. No work shall begin in areas requiring these flags until the Owner's Authorized Representative have confirmed their correct placement.
6. The flags must be continuously maintained as installed unless work is confined to periods when the associated runway, taxiway or taxilane is closed or the NAVAID has been removed from service.
7. Workers and equipment are prohibited from passing beyond red or yellow markers designating safety areas, object free areas or NAVAID critical areas without Owner's Authorized Representative approval as obtained from Airfield Operations on a case-by-case basis except when the associated runway or taxiway/taxilane is closed.
8. Flags shall be removed when directed by the Owner's Authorized Representative or when work within these areas is completed.

E. Trenches, Excavations, and Stockpiles

1. No trenches or excavations will be permitted within the following areas:
 - a. Within 250 feet of a runway centerline (200 feet if approved by Airfield Operations).
 - b. Within 1000 feet from runway end.
 - c. Within 100 feet of a taxiway centerline unless the opening is properly barricaded and lighted.
2. Stockpiles (including spoils piles) are not normally permitted within the boundaries of the AOA. When they are authorized, they shall not be permitted in the following areas unless additional specific approval has been granted:
 - a. Within 400 feet of a runway centerline.
 - b. Within 160 feet of a taxiway centerline.
 - c. Within 138 feet of a taxilane centerline.
 - d. Within 2700 feet of the end of a runway (Runway Object Free Area Extension).
 - e. Within NAVAID Critical Areas.
3. All trenches, excavations and stockpiles must be prominently marked and lighted.

F. Staging of Construction Equipment

1. Construction equipment is not normally permitted to be staged (stored) on the AOA. When authorization has been obtained from Airfield Operations, the equipment shall not be permitted in the following areas unless additional specific approval has been granted:
 - a. Within 400 feet of a runway centerline.
 - b. Within 160 feet of a taxiway centerline.
 - c. Within 138 feet of a taxilane centerline.
 - d. Within 2700 feet of the end of a runway (Runway Object Free Area Extension).
 - e. Within NAVAID Critical Areas.
2. All construction equipment authorized to be staged (stored) on the AOA must be prominently marked and lighted in accordance with Article 1.3E of this Section.

G. Use of Extended Height Equipment

1. The use or installation of extended height construction equipment (more than 20 ft. high) such as cranes, "cherry pickers," drill rigs and batch plants is prohibited without prior approval of Airfield Operations through the Owner's Authorized Representative.

2. Advanced notice for the use of such equipment at any location on the project site must be made to the Owner's Authorized Representative in accordance with Section 01 41 00, "Regulatory Requirements", of these specifications.
3. If utilized at night or in conditions of poor visibility (less than 3 miles visibility), the equipment must be lighted in accordance with FAA Advisory Circular 70/7460-1K (or most current document) Obstruction Marking and Lighting and/or as directed in the airspace study. Lights must be visible throughout 360°, and steady burning red lights must have a minimum light intensity of 32.5 candelas and flashing red lights shall have a peak effective intensity of 2000 ± 25 % candela.
4. This equipment shall be lowered to its stowed height or as low as feasible when not in use or when directed by Airfield Operations or the Owner's Authorized Representative.

H. Maintenance of Construction Areas

1. Construction boundaries shall be clearly defined and marked/fenced as directed by the Operations department.
2. The contractor is responsible for maintaining construction areas to the same standards used on the remainder of the airfield. That includes such things as:
 - a. Keeping grass mowed to a height of 6 to 10 inches.
 - b. Keeping the area clear of debris, trash and excessive construction materials at all times.
 - c. Maintaining all markers, barricades, cones, signs, lighting and erosion control devices in proper working/functional condition.

1.10 AIR OPERATIONS AREA SECURITY

- A. Each employee working within the AOA must be briefed on AOA security regulations and a record of such training maintained by the Contractor. Each employee must attend AOA Safety Coordination meetings prior to the start of work within the AOA that includes security enforcement subject matter. Failure to attend may result in employee being denied access to the AOA.
- B. Each non-badged employee that is allowed escorted access to the AOA for the purpose of construction activities must possess and render for inspection government-issued picture identification. Identification documents shall be subject to being verified through a credential check process by an authorized representative of the Airport Board. All non badged individuals will be required to carry valid government issued identification with them at all times while working inside the AOA. Workers who require AOA access in excess of 15 days during a 45 day period must obtain an Airport badge.
- C. It is the responsibility of every Airport Identification/Access Badge holder to challenge anyone in the AOA who does not have an Airport Identification/Access Badge prominently displayed unless that individual is under escort by a properly badged individual.

- D. Construction storage/office areas located outside the AOA must be secured to prevent unauthorized entry by the public.
- E. The Contractor shall maintain project related AOA fences intact and secure at all times. A 10 foot clear zone will be maintained on both sides of the fence. The clear zone will remain free of stockpiled materials and/or vehicles.
- F. Notify Airfield Operations each day, through the Owner's Authorized Representative, prior to initial entry of any personnel into the AOA. Airfield Operations shall be notified again after the last personnel leave the AOA at the end of each workday.
- G. The Contractor shall utilize approved AOA gates to gain access to the AOA provided coordination has been made through the Owner's Authorized Representative and the Department of Public Safety. The Contractor may also request approval from Airport Operations and the Department of Public Safety to install a new gate (normally such gates are not approved within the SIDA). If approved, a gate number will be assigned by DPS and a work order will be submitted to install an Intellikey lock. Gates in the Central Terminal Area will require Access Control equipment and will be manned by DPS Security Officers. Gates not located in the Central Terminal Area will also be manned by DPS Security Officers.
- H. The Contractor will be responsible for funding and coordination of staffing with DPS and the DFW Project Manager. Additionally, the Contractor will be responsible for installing an air conditioned and heated security post, restroom and telephone. Specifications for guard houses can be obtained from the DFW Design Criteria Manual. Any exceptions will be at the discretion of the Department of Public Safety.
- I. All AOA gates, that are not automatic or manned, shall be secured with a single Airport locking mechanism.
- J. The use of Contractor locks in place of or in addition to Airport locks is specifically prohibited. Contractors may make application through their sponsoring department for a key to Airport locks on required access gates in accordance with established procedures. Those procedures include the following:
 - 1. All Contractors requesting a key to any AOA gate must have a valid Airport Identification/Access Badge.
 - 2. A deposit will be required for each key issued.
 - 3. Deposit for an AOA key will be authorized for release only upon the return of the key.
 - 4. Applications for a key requires completion of the "Authorization for Key(s)" application and approval from the sponsoring department Vice President or designee, and a letter on company letterhead indicating the term for which the key is expected to be required and the name of the responsible individual.
 - 5. Keys shall not be duplicated.
 - 6. Lost or stolen keys shall be reported immediately to the DFW Access Control at the non-emergency number (972-973-5100).
 - 7. Lost or stolen keys will result in forfeiture of the deposit.

- K. In the event that construction requires a portion of the AOA fence or gate to remain open on a temporary basis, the opening will be secured by a DPS Police or Security Officer.
1. The Contractor will be responsible for the funding and coordination of staffing with DPS. The DFW Department of Public Safety provides Police or Security Officers from the off-duty employment pool. Contact the DPS Project Planning and Management Lieutenant (972-973-3531) or the Desk Sergeant (972-973-3533) at least 48 hours in advance.
 2. All fence openings or gates shall remain closed until the Security Officer has verified the vehicle and all occupants are authorized to enter the AOA.
 3. Persons or vehicles with proper identification shall be denied entry if their presence in the AOA is not project related. Forced entry shall be reported immediately to the D/FW Department of Public Safety and the AOC.
- L. Entrance through Terminal Security Gates in the CTA may be permitted under the following conditions:
1. Unescorted access through Terminal Security Gates is limited to those persons displaying a valid Airport Identification/Access Badge programmed with "access" authorization in a vehicle displaying a valid AOA Vehicle Access permit.
 2. All who have been issued an Airport Identification/Access Badge with "access" must present their badge to the badge reader and receive a green light indicating they have current access authorization.
 3. Persons who have been issued an Airport Identification/Access Badge with "access" authorization but do not have it in their possession and those who have been issued badges without "access" authorization shall not be permitted to enter the AOA through a Terminal Security Gate even under escort.
 4. Those persons who do not possess a valid Airport Identification/Access Badge or who have not been issued a badge may be allowed to enter the AOA through a Terminal Security Gate only on official business and only when under escort. The non-badged individuals will be required to sign a visitor's log along with the authorized individual conducting the escort and must also have a valid government issued photo identification on their person at all times.
 5. The maximum ratio for escorting individuals within the CTA will be one Airport Identification/Access Badge individual to five non-badged individuals. Non-badged individuals must remain within visual and physical proximity to the badge holder and also must have valid government issued photo identification on their person at all times.
 6. No one will be permitted to enter a Terminal Security Vehicle Gate on foot. All persons and property are subject to search by security personnel.
 7. **NOTE: Violations of AOA security requirements within Contractor controlled areas of responsibility, which result in criminal or civil penalties, or fines shall be the responsibility of the Contractor and/or individual to resolve or pay, and may result in the temporary or permanent suspension of the Airport Identification/Access Badge.**

1.11 AIRPORT IDENTIFICATION/ACCESS BADGE

- A. No person shall enter the SIDA/AOA without authorization. Any person found on the SIDA/AOA without proper identification as described herein shall be considered unauthorized, removed from the SIDA/AOA, and subject to prosecution and suspension or revocation of the Airport Identification/Access Badge.
- B. All persons authorized access to the SIDA/AOA shall clearly display a valid AOA Airport Identification/Access Badge issued by the Airport on their outer garment, above the waist and below the neck or shall be escorted by an authorized Airport Identification/Access Badge agent of the Airport, the FAA, or a representative of the airline or tenant.
- C. It is the responsibility of every Airport Identification/Access Badge holder to challenge anyone on the SIDA who does not have a valid Airport Identification/Access Badge prominently displayed unless that individual is obviously under the escort of a properly Airport Identification/Access Badged individual.
- D. The Access Control Office administers Airport Identification/Access Badges and is managed by the Department of Public Safety. The Airport Identification/Access Badge is an easily identifiable badge, about the size of a standard credit card. It must be prominently displayed on the outermost garment above the waist and below the neck of the person to whom it was issued.
- E. Applications
 - 1. New applications for an Airport Identification/Access Badge shall be submitted in the manner prescribed by the Access Control Office and coordinated with the Owner's Authorized Representative. Copies of the application may be obtained from the Owner's Authorized Representative. Instructions for filling out the form are on the back. Care should be followed in filling out the application.
 - 2. Each applicant must submit to a criminal history records check through submission of fingerprints to the FBI. In addition, each applicant must receive an "Approved" Security Threat Assessment (STA) result from the TSA prior to badge issuance. Those persons who have been convicted of a disqualifying crime and/or who do not receive an "Approved" STA result from the TSA per CFR 1542 shall be denied a badge.
 - 3. Upon approval of the Airport, the application shall be submitted in person by the applicant to the Access Control Office located at Terminal D, on the departure level, between gates 19 and 22, between the hours of 07:00 and 17:00 Monday through Thursday or between the hours of 07:00 and 12:00 on Friday.
 - 4. The fees for fingerprinting and the Airport Identification/Access Badge shall be per the current schedule of charges.

F. Revocation

1. Violation of AOA Rules and Regulations, Policies and procedures, is grounds for immediate revocation of Airport Identification/Access Badge.
2. Upon termination or upon conclusion of the requirement to access the SIDA as authorized by the Airport, the employer/Contractor shall be responsible for immediately surrendering the Airport identification/Access Badge to the badge holder's sponsor.
3. Employers/Contractors shall be billed a non-returned badge fee for all badges not returned to the Access Control Office within ten business days from the date the Access Control Office is notified of the termination of access privileges.
4. DPS and the badge holder's sponsor have authority to revoke an Airport Identification/Access badge. If an individual's Airport Identification/ Access Badge is revoked, he/she will be immediately escorted from the SIDA/AOA or detained by DPS.

G. Authority

1. The authority to produce and issue Airport Identification/Access Badges lies solely with the Airport.
2. No person shall produce, copy, issue, or use a similar badge at the Airport.
3. No person shall in any way alter an Airport Identification/Access Badge.
4. Airport Identification/Access Badges are the sole property of the Airport and issued for the exclusive use of the individual identified thereon.
5. Airport Identification/Access Badges must be surrendered for inspection upon request of an Agent of the Airport.

1.12 AIR OPERATIONS AREA (AOA) ACCESS PERMIT

- A. No motor vehicle shall enter the AOA unless such vehicle displays an AOA Access Permit or is under escort by a duly authorized representative of the Airport, the FAA or tenant responsible for the AOA gate through which the person is to enter.
- B. The Access Control Office administers AOA Access permits.
- C. A permanent permit is an easily identifiable decal affixed to the left front and rear bumpers of the vehicle to which the permit has been issued and is valid for a maximum of three years. It displays the permit number and expiration date.
 1. A temporary permit is a green colored hanging card placed on the rear view mirror of the vehicle to which the permit has been issued. A temporary permit is not transferable to another vehicle. This permit is valid for a specific period of time up to 90 calendar days, and contains the following information:
 - a. Vehicle license plate number
 - b. Expiration date
 - c. AOA rules
 2. Applications

- a. Applications for AOA Access Permits shall be submitted in the manner prescribed by the Department of Public Safety and coordinated with the Owner's Authorized Representative. Copies of the Application may be obtained from the Owner's Authorized Representative or the Department of Public Safety webpage at:
<http://www.dfairport.com/badge/vehicles.html>.
- b. Applications for AOA Access Permits approved by the sponsoring department shall be submitted to the Access Control Office for issuance. **Note: Contact the Airport Risk Management Office for insurance requirements necessary to obtain a vehicle permit.**
3. Revocation
 - a. Violation of AOA Rules and Regulations is grounds for immediate revocation of AOA vehicle access authority.
 - b. Upon termination or upon conclusion of the requirement to access the AOA as authorized by the Airport, the employer/holder shall be responsible for surrendering the AOA Access Permit to the Airport.
4. Authority
 - a. The authority to produce and issue AOA Access Permits lies solely with the Airport.
 - b. No person shall produce, copy, issue or use a similar permit at the Airport.
 - c. No person shall in any way alter an AOA Access Permit.
 - d. AOA Access Permits are issued for the exclusive use of the vehicle identified on the Permit Application.

1.13 MOTOR VEHICLES ON AOA

A. Authorization and Registration of Vehicles

1. No motorized vehicle shall enter the AOA unless its driver thereof is duly authorized to operate such vehicle on state or municipal highways and has duly authorized access to the AOA/SIDA (if required). All persons authorized unescorted access to the AOA/SIDA shall display an Airport Identification/Access Badge issued by the Airport.
2. No motorized vehicle shall enter the AOA unless such vehicle displays an AOA Access Permit issued by the Airport, or is under proper escort by an Airport, FAA or tenant representative and is properly identified with the company name.
3. All Traffic: All traffic within the AOA shall comply with all lawful orders, signals, or directions of any authorized representative of the Airport. When signs or pavement markings control such traffic, they shall be obeyed unless otherwise directed by an officer or agent of the Airport.

B. Safe Operation of Vehicles:

1. No vehicle shall be operated within the AOA, in a careless or negligent manner, in disregard of the rights and safety of others, at a speed or in a manner which endangers persons or property, while the driver thereof is under the influence of an intoxicant, or if such vehicle is so loaded or poorly maintained as to endanger persons or property.
2. Night or Low Visibility Operations: For night or low visibility operation, all headlights, tail lights, and running or clearance lights on the vehicle shall be operational. The driver of each vehicle shall be responsible for the proper operation of such lights. During Surface Movement Guidance and Control (SMGCS) conditions (visibility less than 1,200 feet visibility) there may be restrictions on the use of vehicles on the AOA. Vehicles not directly in support of aircraft operations will not be allowed access to the Movement Area of the AOA; and non-essential vehicles in support of aircraft operations should not be operated on ramps and aircraft parking areas.
3. Vehicles to Stay to the Right: All vehicles on the AOA shall remain on the right side of a roadway, shall pass any vehicle approaching on an open unmarked traffic area to the right, and shall yield the right-of-way to vehicles approaching from the driver's right unless otherwise directed by sign, signal or agent of the Airport or when necessary to maintain the safe operation of the vehicle relative to traffic flows.
4. Vehicle Speed:
 - a. The maximum speed limit on all AOA ramps is 20 mph and is enforced by the Department of Public Safety.
 - b. Vehicles operating on the ramps, aprons and operational areas of the airport shall proceed with care. Erratic driving and excess speeds on these areas are forbidden. Judgment of such excess speed or erratic driving shall lie with the Department of Public Safety, Airfield Operations and other authorized agents of the Airport.
5. Involvement of Vehicles in Accidents: The driver of any vehicle involved in an accident within the AOA, which results in injury or death to any person or damage to any property, shall stop at the scene of the accident and render such assistance as may be needed. The driver shall also provide his or her name, address and operator's license number to the person injured or to the representative of the owner of the property damaged or to any officer or witness of the injury. Further, the operator shall immediately notify the AOC and make a report of that accident to the Department of Public Safety.
6. Parking Vehicles:
 - a. No person shall park a vehicle or permit the same to remain in the AOA except at such places and for such a period of time as may be prescribed or permitted by the Airport or under emergency conditions.
 - b. No person shall stop or park a vehicle so as to block a driveway, an AOA gate, an aircraft gate or a fire lane, or in other than authorized areas or within 15 feet of a fire hydrant.

7. Right-of-Way: All motor vehicles on the AOA shall yield the right-of-way to aircraft in motion under all conditions, and all DFW Airport vehicles have right of way over Contractor vehicles.
- C. Prohibited Vehicles:
1. The use of motorcycles, bicycles and two-wheeled motor scooters on the AOA is prohibited. EXCEPTION: DPS vehicles.
 2. Vehicles that are not in sound mechanical order with adequate lights, horn, brakes, and have clear vision from the driver's seat are prohibited from operating on the AOA.
 3. Trailers and semi-trailers shall be equipped with proper brakes so that when disengaged from towing vehicle, neither aircraft engine blast nor wind shall cause them to become free rolling. Positive couplings shall be required for all towed equipment.
 4. Vehicles that have not obtained specific authorization from Airfield Operations are prohibited from operating on active portions of the Aircraft Movement Area. When authorized, vehicles shall have a radio transceiver or shall be escorted by a vehicle with such equipment to ensure clear two-way radio communication with the Control Tower, and all operators shall have had successfully passed ground vehicle operator training prior to operating vehicles on the Movement Area.
- D. Driving Under Aircraft: It is prohibited to drive under any portion of an aircraft.
- E. Runway/Taxiway: At no time shall a Vehicle enter a taxiway or runway, unless it is accompanied or directed by a radio-equipped vehicle in contact with, and has been so authorized by the FAA Tower.
- F. Driving between Aircraft and Loading Gate: No Person shall drive any vehicle between an aircraft and a loading gate, when passengers are using the surface walkway between such gate and aircraft, or between an aircraft signal person and an aircraft being pushed out or preparing to taxi.
- G. Driving Distance from Exhaust: Modern, large jet aircraft produce exhaust velocities that can be hazardous to vehicle operations as much as 70-ft. behind the aircraft at idle thrust. At the thrust levels required for an aircraft to start moving from a stop, that distance increases to as much as 300-ft. Therefore, extreme caution must always be exercised whenever passing behind large jet aircraft.
- H. Fueling or De-fueling of Vehicles: No person shall fuel or de-fuel vehicles, or other equipment, in an enclosed space at the Airport without the prior approval of the DPS Fire Prevention Bureau.
- I. Special Vehicle Marking: Vehicles operating on runways or taxiways that do not require an escort must display an amber-rotating beacon.

1.14 ENFORCEMENT OF AOA PROCEDURES

- A. Violations of any of these procedures may, at the discretion of the Vice President of Operations (Vice President of Public Safety for regulatory statutes, i.e. DFW Airport Rules & Regulations) or his/her designated representative(s) and depending on the severity of the violation, result in the following:
1. A verbal and/or written warning.
 2. The individual or vehicle in violation being temporarily or permanently removed from the AOA.
 3. The Contract work being stopped until corrective measures are taken to preclude a recurrence of the violations.
 4. Civil and/or criminal penalties per applicable local, state, and federal laws and the DFW Airport Code of Rules and Regulations.

1.15 RULES AND REGULATIONS FOR THE CONTROL OF AOA BOUNDARY CROSSING BY VEHICLES

A. General Requirements

1. Statement of Policy: It is the policy of the Airport that all vehicles, unless otherwise authorized herein, shall enter and exit the AOA via established gates.
2. Authority for Enforcement: The Vice President of Public Safety is designated the Administrator of the Airport Vehicle Code of Rules and Regulations for the control of AOA boundary crossings. He/she may establish procedures not inconsistent with the Code of Rules and Regulations that he/she determines are necessary to affect the policy of the Code of Rules and Regulations. The Department of Public Safety shall be responsible for the enforcement of the Rules and Regulations.

B. Enforcement of AOA Boundary Crossing Regulations

1. Violations
 - a. If the Administrator determines that a badge holder violates terms of its operating authority, the Code of Rules and Regulations, the Administrator may notify the holder in writing of the violation and by written order direct the holder to correct the violation within a reasonable period of time. In setting the time for correction, the Administrator shall consider the nature of the violation.
 - b. If the violation involves equipment that is unsafe or functioning improperly, the Administrator or his authorized agent shall order the holder to immediately cease use of the equipment.
 - c. If the Administrator determines that a violation is an imminent and serious threat to the public health or safety, the Administrator or his /her agent shall order the holder to correct the violation immediately. If the holder fails to comply, the Administrator shall promptly take, or cause to be taken, any action he considers necessary for the immediate enforcement of the order.

2. The Administrator shall include in a notice issued under this section:
 - a. An identification of the violation;
 - b. The date of issuance of the notice;
 - c. The time period within which the violation must be corrected;
 - d. A warning that failure to comply with the order may result in suspension or revocation of operating authority; and
 - e. A statement indicating that the order may be appealed to the Executive Vice President Airport Operations.
- C. Service of Notice
 1. A holder shall designate and maintain a representative to:
 - a. Receive service of notice required under the Code of Rules and Regulations to be given a holder; and
 - b. Serve notice required under the Code of Rules and Regulations to be given a driver employed or contracting with a holder.
 2. Notice required under the Rules and Regulations to be given:
 - a. A holder must be personally served by the Administrator or on notice sent by certified United States mail, five-day return receipt requested, to the holder or the holder's designated representatives.
 - 1) A driver must be personally served by the Administrator or notice sent by certified United States mail, five-day return receipt requested, to the address last known to the Administrator of the person to be notified, or to the designated representative for the driver.
 - 2) Service executed per this Section constitutes notice to the person to whom the notice is addressed. The date of service for a notice that is mailed is the date of receipt.
- D. Appeal
 1. A holder may appeal a correction order issued under subparagraph 1.b. above or any other action of the Administrator if an appeal is requested in writing not more than 14 calendar days after notice of the order or action is received.
 2. The Executive Vice President Airport Operations shall act as the appeal-hearing officer in an appeal hearing under this Article. The hearing officer shall give the appealing party an opportunity to present evidence and make argument in his/her behalf.
 3. The hearing officer may affirm, modify, or reverse all or part of the order of the Administrator.

1.16 SURFACE INCIDENTS AND RUNWAY INCURSIONS

- A. An AOA Incident Review Board, chaired by the Vice President of Operations will review the facts surrounding movement area surface incidents and/or runway incursions including the affected Contractors and/or department's policies and procedures.
- B. The Review Board's recommendation(s) will be coordinated with the Human Resources advisor (if required), and a decision as to the level of disciplinary action to be taken per DFW Airport Board Policy will be made by the Chairman.
- C. The Chairman will notify the affected Contractor and/or department vice president of the disciplinary action to be administered.

1.17 CONSTRUCTION SECURITY PROCEDURES – TOOL MANAGEMENT PLAN

- A. Mobilization of the "Tool Management Plan" must precede all phases of construction and will be enforced during the duration of the projects.
- B. The Construction Manager shall be responsible for assigning a Safety/Security Officer per the DFW International Airport Construction Procedures – Tool Management Plan.
- C. The Safety/Security Officer is responsible for the implementation and maintenance of the Tool Management Plan.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

PART 4 – APPENDIX

4.1 The following documents/forms attached following "End of Section" are a part of the Specification.

- A. Contractor's AOA Readiness Checklist
- B. AOA Construction Escort Release/Pick Up Point Instruction Sheet
- C. Construction Security Procedures – Tool Management Plan

- END OF SECTION -

**CONTRACTOR'S AOA READINESS CHECKLIST
(TO BE COMPLETED DAILY BY THE CONTRACTOR)**

- _____ Limits of Closure have been clearly identified to all Contractor and subcontractor personnel. Sufficient quantities of closure devices (red flashers, cones, barricades, etc) are on hand to achieve the day's closure. Contractor has sufficient cones, lights and appropriate flags to identify the Release/Pick up Point within their work area.
- _____ Electrician is standing by for circuit lockouts and appropriate circuits have been identified (if applicable).
- _____ All Contractor vehicles entering the AOA have been checked for valid AOA access stickers on driver's side (left) bumper.
- _____ All vehicles are equipped with 360 degree rotating or flashing amber beacons and all beacons are in working order.
- _____ All vehicles have company name clearly identified on driver's side door.
- _____ All AOA badged personnel have badges clearly displayed on their person.
- _____ All non-AOA badged personnel have a government-issued identification on their person.
- _____ All construction equipment and heavy trucks (non-passenger vehicles) have orange and white checkered flags or 360 degree rotating or flashing amber beacons affixed to the highest point.
- _____ Superintendent and QC Supervisor have full set of project documents, including drawings, specifications, addenda, construction permit copy, safety plan, SWPPP copy, approved submittals and request for information in their vehicles and available at all times on the job site. Additional supplies for the superintendent shall include, but not be limited to, fire extinguisher, and first aid kit.
- _____ All foremen and lead men shall have, at a minimum, all drawing sheets and specifications related to their specific area of work on hand.
- _____ Contractor has verified that all small engine equipment and tools (generators, saws, etc.) necessary for the day's activities are on hand and operable.
- _____ Contractor has verified that all necessary manpower, tools, equipment, and materials necessary for the day's activities are on hand and operable.

The purpose of this checklist is to reduce or eliminate the number of superfluous trips to and from the job site that generally are a result of a lack of initial preparedness. Contractor's QC representative will initial each item as it is verified and sign at the bottom when verification is complete. The Board's authorized representative will not call for Operations Escort or circuit lockouts until checklist has been completed each day. This checklist should be attached to the Contractor's Daily Activity Report and submitted to the Owner's Authorized Representative.

Contractor's authorized signature _____ Date: _____

Owner's Authorized Representative signature _____ Date: _____

**DFW INTERNATIONAL AIRPORT
CONSTRUCTION SECURITY PROCEDURES
TOOL MANAGEMENT PLAN**

Date: _____

Project Name: _____

Permit Number: _____

Terminal: _____

Columns & Lines: _____

Contact Name & Phone Number: _____

Additional Information: _____

Contractor's Signature & Title: _____

cc: Assistant Chief James L Brandenburg ~ DFW Airport Police
Naresh Shahani ~ Tenant Construction Facilitator-Airport Development/Engineering

**DFW INTERNATIONAL AIRPORT
CONSTRUCTION SECURITY PROCEDURES
TOOL MANAGEMENT PLAN**

The "Tool Management Plan" is for all construction projects that take place in the public areas of terminal concourses (sterile area) to include "back of house" areas such as offices and concessions within the Security Identification Display Area/Air Operations Area (SIDA/AOA). Mobilization of the "Tool Management Plan" must precede all phases of construction and will be enforced for the duration of the project. The following procedures will be implemented.

- Work hours shall be determined by stakeholders, airport development, and the Contractors.
- The Contractor's Safety/Security Officer is responsible for the implementation and maintenance of the Tool Management Plan.
- The plan will be reviewed with all construction workers prior to each shift.
- The Contractor's Safety/Security Officer is responsible for the tool box inventory that must be maintained by each sub-Contractor. Each sub-Contractor must designate a tool box monitor.
- Consult the "Prohibited Items" list at www.TSA.gov.
- The Contractor's Safety/Security Officer will prepare the tool box inventory form, which must be completed by each sub-Contractor and kept in the tool box at all times.
- Each sub-Contractor tool box monitor must also inventory all hand tools brought to the job site by individual workers prior to each shift. This refers to tools carried in the individual's tool belt or tool bag. The inventory of these tools must be kept in the sub-Contractor's tool box.
- Each subcontractor will store its inventoried tools in the locked box kept in the secure areas on the ramp, or concourse.
- Unlocked tool boxes **must** be monitored at all times by the sub-Contractor's tool box monitor.
- All hand tools will be checked out on the tool inventory list to an individual worker by the sub-Contractor's tool box monitor. Each worker is personally responsible for the hand tools he/she checks out.
- Consumables (e.g. razor blades) are included in the tool box inventory, and may be removed from the inventory and disposed of only by the Contractor's Safety/Security Officer.
- The individual who checked-out a tool must return it to the sub-Contractor's tool box monitor. The tool will be checked-in by the tool box monitor.
- Tools must be kept within five feet of the worker responsible at all times. Unattended tools will be confiscated and returned to the Contractor's Safety/Security Officer.
- It will be the responsibility of the sub-Contractor tool box monitor to reconcile the tool inventory at the conclusion of each shift. The Contractor's Safety/Security Officer **must** verify the accuracy of the inventory at the end of each shift prior to workers leaving the job site.

- The sub-Contractor's tool box monitor will submit the daily tool box inventory to the CONTRACTOR'S Safety/Security Officer who will be responsible for maintaining the permanent document files.
- The Contractor's Safety/Security Officer will submit a summary of the hand tool inventory weekly to the DFW Airport Project Manager.
- If the Contractor's Safety/Security Officer determines tools are missing at the end of the shift or during a shift, the appropriate authorities will be notified immediately in the following order: DFW Airport DPS Communications at 972- 973-3210. DFW Airport Operations Center (AOC) at 972- 973-3112.
- **ZERO TOLERANCE** is being observed for any employee who leaves a tool unattended. The offending employee will be escorted from the work site by the Contractor's Safety/Security Officer and will be removed permanently from the project.
- DFW Airport and/or the Transportation Security Administration (TSA) representatives may randomly monitor the overall construction area at any time and check the tool box inventories.
- Work zones that will be established for longer than 24 hours will be separated from the public by barriers or a demising wall.
- Existing concourse trash receptacles will not be allowed in the designated construction area. Construction trash receptacles will be provided in the work zone for the disposal of all construction trash. Receptacles must be removed from the work zone at the end of each shift.
- The Contractor's Safety/Security Officer **must** conduct a security sweep of the construction area at the end of each shift. DFW Airport representatives may participate in the security sweep at their discretion. It is the responsibility of the CONTRACTOR'S Safety/Security Officer and Night Superintendent to validate if the security sweep is successful.
- Primary access for all employees, tools, equipment, and materials to the construction area will be from the AOA via a DPS manned AOA gate. Employees will be restricted from accessing an employee portal inside the terminals. Employees may access a TSA screening checkpoint; however, **NO tools on the TSA prohibited items list are allowed.** All Vehicles and persons entering the AOA through the designated construction security gate are subject to search.
- Employees are restricted to the work area designated by the Contractor's Safety Officer. The Contractor's Safety Officer or designee will monitor the work zone to ensure employees do not use public restrooms, concessions, or any other facilities in the concourse. Employees who violate these provisions are subject to removal from the project. **NO EXCEPTIONS.**

SIDA BADGE REQUIREMENTS

SIDA/AOA badge requirements will be enforced for all construction employees using the following process.

- SIDA/AOA access badges will be obtained from the DFW Airport Access Control Office located in Terminal D. Information and badge applications are available at www.dfwairport.com on the Department of Public Safety web page.
- This process includes fingerprinting, background check and interactive video/testing.
- Non-badged employees will be allowed on the AOA under the following rules **only**. One badged employee may escort a maximum of five non-badged employees to the AOA/SIDA or Sterile work area. Escorts are not permitted through employee portals. The non-badged employee must have a government issued I.D. in his or her possession. The badged employee's responsibility will be to continuously monitor and remain in physical proximity of the non-badged employees such that they can control or direct the activity of the non-badged employees at all times.
- The AOA Badge must be visibly displayed on the outer garment and above the waist at all times while the employee is in the construction area or on the AOA.

NONPUBLIC AREAS

The following procedures will be used in the nonpublic area of the terminal construction areas.

- Tools used over the long term may be staged within the construction area in locked boxes. One lock box will be permitted for each trade, to reduce the number of trucks entering the AOA on a daily basis.
- Employees are allowed to wear their personal tool belts and hand carry tools into the construction on a daily basis.
- One truck per day will be allowed to deliver tools to the construction area. Vehicles must be permitted by DFW Airport to enter the AOA.
- The CONTRACTOR'S's Safety/Security Officer will monitor the construction area on a daily basis.

PART 1 – GENERAL

1.2 SUMMARY

- A. Section includes procedural requirements for alterations work.**

1.3 DESCRIPTION

- A. Coordinate work of alterations and renovations with new construction.**
- B. Apply the procedures and administrative requirements of this Section to all sections of the Specifications which are involved in alterations to the existing building and equipment.**
- C. Remove existing surface finishes as needed to install new work and new finishes.**
- D. Cut, move or remove existing features as required to allow Work to proceed whether or not specifically detailed on the Drawings.**
- E. Remove all materials or equipment which is not to be incorporated in the Work..**
- F. Remove unsuitable or extraneous materials not marked for salvage.**
- G. Patch, repair, refinish or reinstall existing items to remain in finished work, to specified condition for each material, with joints and finishes made similar to adjacent work.**

1.4 SCHEDULING, ACCESS AND SECURITY

A. Interruption of Services

- 1. Do not interruption utilities or services except as specifically permitted in writing by Owner.**
- 2. Identify areas to be affected by interruption when requesting permission. Search out utility lines to determine the effect of each outage upon operations within the building.**
- 3. Make requests at least 5 full days before date of proposed outage.**

B. Security

- 1. Contact Owner's Authorized Representative for access to locked areas.**
- 2. Contractor may be issued keys to existing areas at Owner's discretion.**
- 3. Maintain security of work areas during Construction.**

C. Maintenance of Access and Operations

- 1. Owner will continue to perform normal business activities in existing building during construction. Maintain proper and safe access at all times. Keep access points free of construction debris at all times.**
- 2. Demolition is not to interfere with normal building operation or occupancy.**
- 3. Demolition of fire alarm systems or components or Work adjacent to fire alarm equipment requires a demolition permit issued from the Department of Public Safety prior to beginning Work.**

D. Building Access

1. Access building at entrances designated by Owner's Authorized Representative.
 2. Access construction areas within building by constructing passageways and corridors as designated by Owner's Authorized Representative.
 3. Restrict Construction to designated work areas and to access areas specifically designated by Owner's Authorized Representative.
- E. Interruption of Roadway Traffic
1. Interruption of traffic by blocking roadways is prohibited, except as specifically permitted in writing by Owner's Authorized Representative.
 2. Identify areas to be affected by interruption when requesting permission.
 3. Make written requests at least seven (7) full days before anticipated date of proposed roadway restriction.
 4. In most cases, interruption of traffic will only be allowed between the hours of 22:30 and 05:30. Specific details will be provided in individual delivery orders.
 5. Provide steel plates over open trenches and remove scaffolding and barricades between the hours of 05:30 and 22:30.
 6. Submit specific traffic control drawings for individual construction packages.

PART 2 – PRODUCTS

2.1 TEMPORARY PROTECTION

Provide and maintain temporary partitions to seal openings to Owner-occupied areas, to provide temporary security and to provide protection to public as shown in Drawings. Submit documentation of proposed temporary partitions for approval.

A. Partitions

1. Construct framing of 2 X 4 lumber treated to be fire-retardant treated in accordance with AWPAC20, and bearing UL Classification Stamp FR-S. Provide continuous top and bottom plates, studs at 24 in on center, and continuous bridging at 4 ft. on center vertically.
2. Cover frame with 1/4" in. thick tempered hardboard or 1/2 in. thick plywood, listed by Underwriters' Laboratories, Inc., as having a flame spread rating of less than 25 and smoke developed rating of less than 50. Apply to one side and fasten to studs with drywall screws at 12 in on center, countersunk.
3. Paint: Paint partitions with prime coat and 2 finish coats of exterior latex, color to match similar to adjacent surface.

B. Provide single acting doors, opening out, with sturdy closer, closing against gasketed stops on frame. Cover one side of door with same material as used to cover partitions. Provide push bars and bump plates. Provide locking mechanisms for security.

C. Mats: Provide mats at doors to reduce tracking of dust. Replace or clean daily.

PART 3 EXECUTION

3.1 ALTERATIONS, CUTTING AND PROTECTION

- A. Perform cutting and removal work removing no more material than is necessary and without damage to adjacent work.

- B. Assign patching of finish materials to workers skilled in patching and restoration work.
- C. Sleeving
 - 1. Provide sleeves appropriate to existing construction and new penetrating work where new pipes, conduit and ducts penetrate existing walls and floors.
 - 2. Fill voids between sleeves and penetrating pipes, conduit and ducts with approved materials.
 - 3. Where penetrations are through fire-rated walls and floors, fill voids with fire safety insulation or foam penetration sealant to maintain fire rating of assembly being penetrated.

3.2 REPAIRING AND PATCHING

- A. Perform patching, extending, relocation and reworking of existing elements as designated on Drawings and as required to make work complete.
- B. Patch and extend existing work using skilled workers that are capable of matching existing quality of workmanship. Quality of patched or extended work shall equal new Work.
- C. Patching
 - 1. In areas where a portion of an existing finished surface is damaged, lifted, or stained as a result of alterations work, patch or replace damaged portion of surface with similar material.
 - 2. Patch holes in partitions, floors and ceiling resulting from removal of piping or equipment.
 - 3. Provide adequate support or substrate for patching of finishes.
- D. Matching
 - 1. Restore existing work that is damaged during construction to a condition equal to surrounding work of a similar nature.
 - 2. Refinish surfaces of the patch Work to provide a uniform color and texture over entire surface.
 - 3. Refinish the entire surface to a visible stopping point or change of plane if surrounding surface cannot be matched in the area of the patch.
 - 4. Patch floors, walls and ceilings with finish materials similar to adjacent finish at locations where partitions are removed,

3.3 CLEANING

- A. Clean the work area at the completion of each phase of Work before proceeding with subsequent Work.
- B. Clean areas daily.
- C. Clean spillage, overspray, collections of dust or debris, and damage to tenant-occupied spaces immediately.
- D. Clean up surfaces, remove equipment, salvage and debris, and return in condition suitable for use by tenant as quickly as possible as soon as work in each area of alterations is complete.

- END OF SECTION -

PART 1– GENERAL

1.1 CODES AND CRITERION

- A. All work, construction activities and material pertinent to this contract shall comply with the Airport Construction and Fire Prevention Standards Resolution and Amendments to the Codes repository, which can be located on the DFW Website, <http://www.dfwairport.com/development/index.php>.

1. Fire Ratings:

- a. Where material, component, or assembly is required to be fire rated, fire rating shall be determined or listed by one of the following testing agencies or other agencies acceptable to governing authorities having jurisdiction.
- b. Underwriters Laboratories, Inc.
- c. Factory Mutual Laboratories.
- d. National Board of Fire Underwriters.
- e. Warnock Hersey.

- B. Where reference is made to only one testing authority, equivalent fire rating as determined or listed by another agency is acceptable if approved by applicable governing authorities having jurisdiction.

1.2 ENVIRONMENTAL PROTECTION, STORMWATER POLLUTION AND EROSION/ SEDIMENT CONTROL

- A. Refer to Section 01 57 23, Storm Water Pollution Prevention.

1.3 ENVIRONMENTAL PROTECTION, GENERAL

- A. Refer to Construction Contract General Provisions, Section 70-18, Environmental Protection, for requirements.

1.4 CONSTRUCTION DEBRIS WASTE DISPOSAL

- A. Refer to the DFW "Construction Debris Waste Disposal Guide" for procedures for the transportation and disposal of construction debris, solids, and wastewater that may be generated as a result of construction activities.
- B. Refer to Section 01 74 19, Construction Waste Management and Disposal.

1.5 AIRSPACE PERMITS, CONSTRUCTION CRANES

- A. No construction using equipment over 20' tall shall commence without the appropriate airspace permits. If possible, the OWNER'S Representative will obtain airspace permits for operation of construction equipment within the work areas of the contract prior to bidding. Otherwise, the Contractor shall obtain airspace permits after contract award.

- B. All construction involving cranes, batch plants and construction equipment over 20 feet in height shall be coordinated at least 65 days in advance with Airport Operations through the Owner's Authorized Representative. The attached "Airspace Review" form or FAA Form 7460-1 shall be completed by the Contractor and transmitted to the Owner's Authorized Representative for submittal to DFW Code at least 65 days prior to start of work to allow adequate time for review and approval. The following information is required: location of work areas, maximum extendable height of proposed equipment, duration of use, and daily hours of operation.
- C. The top of each crane boom shall be marked by a 3' x 3' orange and white-checked flag, and shall be lowered at night and during periods of poor visibility as determined by the DFW Department of Public Safety.

1.6 OVERSIZE VEHICLES AND CRANES

- A. All oversize vehicles and crane movements on the public roadway system shall be coordinated with the DFW Department of Public Safety seven days in advance.

1.7 OCCUPANCY PERMIT

- A. The General Contractor shall be responsible for securing a Certificate of Occupancy permit at completion of the project and shall deliver such permit to Owner. Final Payment shall be retained until the Owner has received permit.

1.8 PERMITTING

- A. Contractor shall, without additional expense to Owner, obtain necessary licenses and permits, and be responsible for complying with any federal, state, county, and municipal laws, codes, and regulations applicable to the performance of the work, including, but not limited to, any laws or regulations requiring the use of licensed contractors to perform parts of the work. However, the construction permit fee required by DFW Airport Code will be waived.

1.9 UNDERGROUND STORAGE TANK REGISTRATION

- A. A certificate of registration issued by the TEXAS COMMISSION ON ENVIRONMENTAL QUALITY is required for all contractors engaged in the installation, removal or repair of underground storage tank systems, including piping.

PART 2– PRODUCTS

Not Used.

PART 3– EXECUTION

Not Used.

PART 4– APPENDIX

- 4.1 The following documents/forms attached following "End of Section" are a part of the Specification.
 - A. Certification Statement for Storm Water Pollution Prevention Plan ("SWPPP").
 - B. Dallas/Fort Worth International Airport Board Airspace Review.

- C. Dallas/Fort Worth International Airport Board Airspace Review & Permit Application.

- END OF SECTION-

DALLAS/FORT WORTH INTERNATIONAL AIRPORT

Certification Statement

For

Storm Water Pollution Prevention Plan ("SWPPP")

"I certify under penalty of law that I understand the terms and conditions of the National Pollution Discharge Elimination System (NPDES) general permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification."

DATE: _____

AUTHORIZED SIGNATURE: _____

PRINT NAME: _____

TITLE: _____

COMPANY NAME: _____

COMPANY ADDRESS: _____

COMPANY TELEPHONE: () _____

DESCRIPTION OF SITE: _____

DFW CONSTR. CONTRACT NO.: _____

DALLAS/FORT WORTH INTERNATIONAL AIRPORT BOARD

AIRSPACE REVIEW

FAA No. _____ DFW No.: _____ CA No.: _____
Applicant: _____ Contact: _____ Phone No.: _____

Project Description

Fixed Temporary* _____ Mobile Temporary* _____ Permanent _____

Construction Schedule

Start Date: _____ End Date: _____

Location

(Indicate in NAD 1983 (Geodetic, Lat./Long.) coordinates and attach location plan and site plan)

A. Latitude _____ E. Perpendicular Dist*** _____
B. Longitude _____ F. Runway Elevation AMSL _____
C. Impacted Runway _____ G. Site Elevation AMSL _____
D. Distance from Runway End** _____ H. Object Elevation AGL _____

Mitigation Conditions

☐ No Impact ☐ As Noted ☐ FAA RO Study Recommended

Reviewed By:

FAA Airways Facilities _____ Date: _____

FAA Air Traffic Control _____ Date: _____

DFW Operations Dept. _____ Date: _____

* The FAA Regional Office must review temporary structures exceeding 753 ft. AMSL.

** Measured parallel to runway from proposed structure to nearest runway threshold.

*** Measured from proposed structure to runway centerline.

DFW Contacts: Richard Gurley, 972-973-1771, Steve Tobey, 972-574-8535

DALLAS/FORT WORTH INTERNATIONAL AIRPORT BOARD
AIRSPACE REVIEW & PERMIT APPLICATION
CRANE/EQUIPMENT OPERATION AREAS (_____') HEIGHT

Coordinate Point	Latitude	Longitude	AMSL at Point	Object AMSI
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
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16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section defines common phrases and acronyms that are used in relationship with construction within the Dallas/Fort Worth International Airport, including but not limited to Parking Revenue Area (PRA) and/or Air Operations Area (AOA).
1. Access Control Office – A section of the Department of Public Safety responsible for administering Airport Access/Identification Badges and AOA Vehicle Access Permits.
 2. Access Permit (AOA) – A permit issued to a motor vehicle required to enter the AOA.
 3. Administrator – The Vice President of Airport Operations for the Dallas-Fort Worth International Airport, or authorized agent
 4. Air Operations Area (AOA) – A portion of the Airport which encompasses the landing, takeoff, taxiing and parking areas for aircraft. A six-foot chain link fence and positive controlled gates protect all such areas. No unguarded openings are allowed.
 5. Air Operations Area (AOA) ACCESS PERMIT– A permit issued to a motor vehicle required to enter the AOA.
 6. Airfield Operations – A section of the Operations Department responsible for the day-to-day safe and efficient operation of the airfield.
 7. Aircraft Movement Area (AMA) – Area surrounding all taxiways and runways within which aircraft and vehicles operate at the direction of the Federal Aviation Administration (FAA) Air Traffic Control Tower, and all other areas within the AOA but outside the ramp/apron areas.
 8. Aircraft Rescue And Fire Fighting (ARFF) ROAD – A designated road on the Airport that is under the operational control of Department of Public Safety (DPS) and Airport Operations and is used for emergency purposes.
 9. Airfield Construction – All work performed within the AOA.
 10. Airport – Airport the land and improvements located thereon, within the confines of the Dallas/Fort Worth International Airport (DFW).
 11. Design, Code and Construction (DCC) – DFW Airport Department responsible for, among other functions, the development of the Airport's various components. The Contractor is required to coordinate with DCC and obtain permits from DCC through use of certain forms as described in various Division 1 Sections.
 12. Airport Identification/Access Badge, A Picture Identification badge issued by the airport operator granting unescorted access to specific areas of the Airport for the purpose of conducting business in accordance with the Rules and Regulations, Federal, state, and local laws and regulations, and Policies and Procedures of the Airport.

13. Approval Authority – The approval authority for ingress/egress issuance is the Vice President of Airport Operations or Vice President of DCC (for construction related Parking Revenue Area (PRA) devices).
14. Apron (RAMP) – A paved surface usually around terminal buildings, cargo/air freight buildings, and Hangars from which aircraft operate or are parked.
15. Apron Entrance Point (AEP) – A taxilane between certain terminal apron areas and adjacent taxiways. It is identified by surface painted markings consisting of yellow circles and black identification numbers. May be referenced as “SPOTS”
16. Architect/Engineer (A/E) – The individual, partnership, firm or corporation duly authorized by the Owner to be responsible for professional services associated with architecture, engineering or management for the project.
17. Board – The Dallas/Fort Worth International Airport Board, a public body, established under the laws of the State of Texas and hereunto duly authorized by contract between the City of Dallas, a municipal corporation of Dallas County, Texas, and the City of Fort Worth, a municipal corporation of Tarrant County, Texas, or its Authorized Representatives
18. Central Terminal Area (CTA) – The ramp areas serving Terminals A, B, C, D and E, and the 1E ramp.
19. Code Of Rules And Regulations – DFW published Rules and Regulations as ratified by local jurisdiction for the control of parking revenue boundary crossing by vehicles.
20. Commissioning (Cx) – The systematic process of ensuring that all construction efforts that meet a certain criteria are completed in accordance with Owner specifications.
21. Commissioning Agent (CxA) – The person or entity that oversees the development and execution of the commissioning plan.
22. Construction Manager at Risk (CMAR/Contractor) – The person or entity designated by the Owner to provide construction or construction management services during design and construction of the work.
23. Control Plaza – The entrance and exit gates at the north and south ends of the Airport that provides a stop barrier on northbound and southbound International Parkway.
24. Cutting And Patching – It is hereby defined to include but is not necessarily limited to the cutting and patching of existing work, in order to accommodate the coordination of work, or the installation of new work. Patching is also defined as the repair or filling of surfaces where existing items are removed.
25. Drawings – Refers to plans, elevations, sections, details and schedules that are prepared for construction of the Work and are part of the Contract Documents containing instructions and details for construction of the Project.

26. **Driver** – An individual who drives or operates a commercial, governmental, institutional, and other type vehicle.
27. **Emergency Grid** – An airport wide grid system used to determine locations within the Dallas/Fort Worth Airport site by the Department of Public Safety (DPS). The grid has 1000' by 1000' grid units that are further broken down to 16 equal parts. The work area designation as noted is to be used in reporting any incident occurring during construction. For reference purposes the grid is located in the Construction Drawings of each package.
28. **Escort** – The taking of a non-SIDA badged person and/or vehicle through the TSA passenger screening checkpoint, DPS manned AOA gate or DFW AOA access gate. The person conducting the escort must maintain both physical and visual proximity to the person and/or vehicle being escorted at all times and is responsible for all actions of the party being escorted. No more than five (5) non- SIDA badged persons or vehicles may be escorted by one SIDA badged employee. When transferring an escort the new escort must acknowledge responsibility for the escort. When escorting a vehicle the driver of the vehicle being escorted must be certified to drive on the AOA. For escorts in the terminal area, the escort must check in at a DPS manned AOA gate and register all persons/vehicles being escorted. This requirement is also outlined in the on-line SIDA training course administered by the DFW Access Control Office.
29. **Federal Aviation Administration (FAA)** – The Federal Aviation Administration of the U.S. Department of Transportation.
30. **Haul Route** – A specified roadway within the AOA serving authorized construction- related traffic.
31. **Holder** – A person, or his agent, who is granted operating authority to conduct Parking Revenue Area (PRA) boundary crossings as specifically authorized in the Code of Rules and Regulations.
32. **Ingress/Egress Device** – A device that allows entry into the PRA by specified, unescorted vehicles.
33. **Inspector** – An authorized representative of the Owner assigned to make all necessary inspections and/or tests of the Work being performed or of the materials furnished or being furnished by the Contractor.
34. **Legal Resident** – A citizen of the United States or a person residing in the United States in accordance with Federal Immigration Laws.
35. **Managing Architect/Engineer** – The entity responsible for overall management of the architectural or engineering work for the program as opposed to the Architect/Engineer who is responsible for the execution of the architectural and engineering work.
36. **Navigational Aid (NAVAID)** - Apparatus, generally located within the AOA, which serves as a guide to landing aircraft.

- 37. NAVAID Critical Area (NCA) - Three-dimensional areas surrounding NAVAIDs that, if penetrated by equipment or stockpiles, could cause interference with navigational equipment.
- 38. Non-Movement Area – Aprons and other portions of the AOA in which control and direction by the FAA Tower is not required.
- 39. Object Free Area (OFA) – An area on the ground centered on a runway, taxiway or taxilane within which no object may be located unless it is frangible and aeronautically required due to its function.
- 40. Obstacle Free Zone (OFZ) – The airspace below 150 feet above the established airport elevation and along a runway and extended runway centerline that is required to be clear of all objects, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function.
- 41. Operate – To drive or to be in control of a vehicle.
- 42. Operating Authority – Permission granted by the Administrator for a vehicle to enter the PRA in accordance with these Rules and Regulations.
- 43. Operations Department (DFW Airport Operation Department) - The airport department responsible for, among other functions, the Airfield Operations Section
- 44. Operator – The driver of a motor vehicle, the Owner of a vehicle, or the holder of vehicle operating authority.
- 45. Owner – The Dallas-Fort Worth International Airport Board, a public body, established under the laws of the State of Texas and hereunto duly authorized by Agreement between the City of Dallas, a municipal corporation of Dallas County, Texas, and the City of Fort Worth, a municipal corporation of Tarrant County, Texas, or its Authorized Representatives.
- 46. Owner's Authorized Representative (OAR) – The Owner's Authorized Representative shall be designated in writing with specific limits of authority, and may be an employee of the Owner or employees of firms under Contract with the Owner to provide specific services. The OAR is the first line of coordination with any DFW entities.
- 47. Parking Business Unit (PBU) - The Airport department responsible for, among other functions, revenue control and operations of the Parking Revenue Area. Issues and monitors use of Parking Privileges and Vehicle Access Tags (VATs.)
- 48. Parking Revenue Area (PRA) – The area bounded by fences, gate control equipment and arms, from which the Owner produces revenue from parking spaces.
- 49. PCA Unit – Pre-conditioned Air Unit, provides cooling to the jet bridge and the aircraft while the aircraft is parked at the gate.
- 50. Person – An individual, a corporation, a government or governmental subdivision, or an agency, trust, partnership, or two or more persons having a joint or common economic interest.

- 51. Project – The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part.
- 52. Project Manager – The Owner's Authorized Representative who is responsible for overseeing the Work on the Owner's behalf.
- 53. Project Manual – Defined as the package containing all of the Specifications, Special and General Provisions, and all attachments (soil, environmental, safety, etc.)
- 54. Unifier – Unifier is web-based project management and documentation control software. It is used for report generation, data collection, documentation control, and project detailing and organization of some DFW construction projects
- 55. Rules And Regulations – The vehicle Rules and Regulations established under AIRPORT AOA Rules and Regulations for Construction and Maintenance.
- 56. Ramp – (See APRON).
- 57. Runway – A designated area for landing or takeoff of aircraft.
- 58. Safety Area – A specific area surrounding runways and taxiways, which requires special authorization to enter.
- 59. Schedule Of Charges – The rates and fees charged by and as approved by the Owner.
- 60. Security Identification Display Area (SIDA) –All areas of an airport identified in the airport security program as requiring each person to continuously display on their outermost garment above the waist and below the neck, an airport-approved identification medium unless under airport-approved escort. For purposes of construction and maintenance, this also includes the entire area of the AOA.
- 61. Unifier – Database Software System used by DCC. All project submittals, meeting minutes, correspondence, etc. should be completed through this system.
- 62. Skylink System – Guide way, stations and vehicles to provide timely inter-terminal connections in the Central Terminal Area (CTA).
- 63. Specifications – Defines the qualitative requirements for material, and workmanship required for the Work. The Specifications consist of various sections in Division 01 through Division 50. The Specifications are part of the Contract Documents.
- 64. Stockpiles – Quantities of materials, debris or spoils, which remain on the work site after work has finished for the day, etc.
- 65. Taxilane – A portion of an aircraft parking area used for access between taxiways and aircraft parking positions
- 66. Taxiway – A defined path established for the taxiing of aircraft from one part of an airport to another.

- 67. Vehicle – Private, commercial, governmental, institutional and any other type vehicles that operate in a way that requires crossing of the PRA boundary and have been licensed by proper authority.
 - 68. Vehicle Owner – The person to whom state or other appropriate license plates for a vehicle were issued.
 - 69. Work – The Work comprises the completed construction required by the Contract Documents and includes all labor necessary to produce such construction, and all materials and equipment incorporated or to be incorporated in such construction.
- B. Promptly resolve any conflicts in the way the phrases in Paragraph 1.1 A are interpreted with the Owner's Authorized Representative.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

- END OF SECTION -

PART 1 – GENERAL

1.1 REQUIREMENTS INCLUDED

- A. This Section includes the abbreviations and acronyms that are included in Contract Documents to identify reference standards.

1.2 QUALITY ASSURANCE

- A. Application: When a standard is specified by reference, comply with requirements and recommendations stated in that standard, except when requirements are modified by the Contract Documents, individual delivery order, or applicable codes establish more strict standards.
- B. Publication Date: The publication in effect on the bid date, except when a specific publication date is specified.

1.3 DEFINITIONS

- A. "Directed", "Designated", "Selected", "Requested", "Authorized", "Permitted", or words of similar import: Direction, designation, selection, or similar action of Architect/Engineer is intended.
- B. "Require" and words of similar import: As required to complete Work and as required by Architect/Engineer.
- C. "Perform": Contractor shall perform operations necessary to complete Work, including furnishing of necessary labor, tools and equipment and further including and installing of materials indicated, specified or required to complete performance within the Contract Price.
- D. "Provide": Contractor shall furnish and install Work.
- E. "Other acceptable manufacturer", "equal", "acceptable equal", "equivalent", or words of similar import: Refer to products or work proven to the satisfaction of the Architect / Engineer to be in compliance with the intent of the Contract Documents.
- F. "Acceptance", "acceptable", or words of similar import: Acceptance, acceptable or similar words shall be as approved by Architect/Engineer.
- G. "At no extra cost to Owner", "With no extra compensation to Contractor", "At Contractor's own expense", or words of similar import: Terms shall be understood to mean that Contractor shall perform or provide specified operation of Work at no increase to Contract Sum stated in executed Contract.
- H. "NIC": Work of this Project, which is not being performed or provided as part of Contract; term shall mean "Not in This Contract" or "Not Part of Work to be performed or provided by Contractor". "NIC" work is indicated as aid to Contractor in scheduling amount of time and materials necessary for completion of Contract.

- I. "Indicated" refers to graphic representations, notes or schedules on Drawings, or other Paragraphs or Schedules in Specifications, and similar requirements in Contract Documents. Where term "shown", "noted", "scheduled", and "specified" are used, it is to help locate reference; no limitation on location is intended except as specifically noted.
- J. "Accepted", where used in conjunction with Architect's action on Contractor's submittals, and requests, is limited to responsibilities and duties of Architect/Engineer stated in General and Supplementary Conditions. Approval does not release Contractor from responsibility to fulfill Contract Document requirements, unless otherwise provided in Contract Documents.
- K. "Regulation" includes laws, statutes, ordinances, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within construction industry that control performance of Work, whether they are lawfully imposed by authorities having jurisdiction or not.
- L. "Furnish" means supply and deliver to Project Site, ready for unloading, unpacking, assembly, installation, and placing into operation in accordance with the Contract Documents.
- M. "Install" means unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, and finishing, curing, protecting, cleaning and similar operations.
- N. "Installer" is entity engaged by Contractor, either as employee, subcontractor or sub-subcontractor for performance of particular construction activity, including installation, erection, application and similar operations. Installers are required to be experienced in operations they are engaged to perform. Term "experienced", when used with term "installer", means having minimum five years previous projects similar in size and scope to this Project, and familiar with precautions required, and has complied with requirements of authority having jurisdiction.
- O. "Project Site" is space available to Contractor for performance of Work, either exclusively or in conjunction with others performing construction as part of Project. Extent of Project Site is shown on Contract Drawings, and may or may not be identical with description of land upon which Project is to be built.
- P. "Testing Laboratory" is independent entity engaged to perform specific inspections or tests, either at Project Site or elsewhere, and to report on, and if required, to interpret results of those inspections or tests.

1.4 SPECIFICATION SENTENCE STRUCTURE

- A. Specifications are written in modified brief style. In general, words "the", "a", "an", "shall", "shall be", and "all" are not used. Requirements indicated and specified apply to all work of same kind, class, and type even though word "all" is not stated.
- B. Simple imperative mood of sentence structure is used in Specifications which places verb as first word in sentence. Where "perform", "provide", "install", "erect", "furnish", "connect", "test", or words of similar import are used, it shall be understood that words include meanings of phrase "Contractor shall..." before words.
- C. Standard paragraph titles and other identifications of subject matter in Specifications are intended as aid in locating and recognizing various

requirements in Specifications. Titles do not define, limit or otherwise restrict Specifications text. Capitalizing of words in text does not signify or mean that words convey special or unique meanings having precedence over other parts of Contract Documents. Specification text shall govern over titling and shall be understood to be interpreted as a whole.

1.5 DOCUMENT ORGANIZATION

- A. Organization of Project Manual and Contract Drawings are not intended to control or to lessen responsibility of Contractor in dividing Work among its subcontractors, or in establishing extent of Work to be performed by any trade.

1.6 SYMBOLS

- A. Graphic symbols used in Contract Documents are those symbols recognized in construction industry for indicated purposes. Where not otherwise noted, symbols are those defined in "Architectural Graphics Standards", published by John Wiley & Sons, Inc., Current Edition.
- B. Graphic symbols used on mechanical and electrical drawings are generally aligned with symbols recommended by American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE). Where appropriate, mechanical and electrical symbols are supplemented by more specific symbols recommended by the technical associations including: American Society of Mechanical Engineers (ASME), American Society of Plumbing Engineers (ASPE), Institute of Electrical and Electronics Engineers (IEEE), and similar organizations. Request clarification from the Architect/Engineer if the symbols are unfamiliar.

1.7 REFERENCE STANDARDS

- A. Reference Standard-Abbreviations:
 - 1. Reference standards are referred to in Specification Sections by basic designation only.
 - 2. Where acronyms or abbreviations are used in Contract Documents, they shall mean recognized name of trade association, standards generating organization, authority having jurisdiction, or other organization applicable to context of requirement.
 - 3. Refer to "Encyclopedia of Associations", published by Gale Research Company, available in most public libraries, to reference unfamiliar organization acronyms or abbreviations.
- B. Publications of organizations and societies listed in individual Specification Sections shall be considered integral part of Contract Documents to extent referenced. Work shall be executed in accordance with Reference Standard requirements and Contract Document requirements.
- C. When conflict exists between requirements of reference standards and Contract Documents, you need to request clarification from the Architect/Engineer before proceeding.
- D. Publications are referred to in text by basic designation only with organizations and societies referenced by abbreviations indicated.

- E. When standard is referred to in individual Specification Section but is not listed by title and date, it shall be considered to be latest edition with supplements or amendments at date of Project Manual issue.
- F. Make available at Project site copies of reference standards as required, or as the Architect/Engineer or Owner may request and then maintain those copies at project site throughout construction period.

1.8 ABBREVIATIONS AND NAMES OF ORGANIZATIONS

- A. Obtain copies of referenced standards direct from publication source Airport codes may be obtained from Airport Building Codes Department. Keep on file at job site for reference by the different trades to ensure proper performance of work.

AA	Aluminum Association
AABC	Associated Air Balance Council
AAMA	American Architectural Manufacturers Association
AAES	American Association of Engineering Societies
AAN	American Association of Nurserymen
AASHTO	American Association of State Highway Transportation Officials
ACEI	Air Conditioning Engineers, Inc.
ACI	American Concrete Institute
AGA	American Gas Association
AGC	Associated General Contractors of America
AHA	American Hardboard Association
AI	Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ALSC	American Lumber Standards Committee
AMCA	Air Movement and Control Association
ANSI	American National Standards Institute
APA	American Plywood Association
APFA	American Pipe Fittings Association
ARI	Air-Conditioning and Refrigeration Institute
ASA	American Subcontractors Association
ASCA	American Spray Coaters Association
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers

Document Title: REFERENCE STANDARDS**Section: 01 42 19**

ASLA	American Society of Landscape Architects
ASME	American Society of Mechanical Engineers
ASPE	American Society of Plumbing Engineers
ASSE	American Society of Sanitary Engineering
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
AWI	Architectural Woodwork Institute
AWPA	American Wood-Preservers' Association
AWS	American Welding Society
BIA	Brick Institute of America
BHMA	Builders Hardware Manufacturers Association
BOCA	Building Officials and Code Administrators
CBM	Certified Ballast Manufacturers
CDA	Copper Development Association
CISCA	Ceiling & Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CPSC	Consumer Product Safety Commission
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard
CSI	Construction Specifications Institute
CTI	Ceramic Tile Institute
DHI	Door & Hardware Institute
EPA	Environmental Protection Agency
FM	Factory Mutual System
FAA	Federal Aviation Administration
FARs	Federal Aviation Regulations
FGMA	Flat Glass Marketing Association
FS	Federal Specification
FSCSI	Food Service Consultants Society International
GA	Gypsum Association
HPMA	Hardwood Plywood Manufacturers Association
IAPMO	International Institute of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronics Engineers

IES	Illuminating Engineering Society
IETA	International Electrical Testing Association, Inc.
IILP	International Institute for Lath & Plaster
ILI	Indiana Limestone Institute of America
IPCEA	Industrial Power Cable Engineers Association
ISA	Instrument Society of America
IWA	International Waterproofing Association
MCAA	Mechanical Contractors Association of America
MLSFA	Metal Lath/Steel Framing Association
MIA	Marble Institute of America
MIL	Military Specifications
MSSVFI	Manufacturer's Standardization Society of the Valve & Fitting Industry
NAAMM	National Association of Architectural Metal Manufacturers
NAFM	National Association of Fan Manufacturers
NAPA	National Asphalt Pavement Association
NBS	National Bureau of Standards
NCPWB	National Certified Pipe Welders Bureau
NEBB	National Environmental Balancing Bureau
NEC	National Electric Code
NEMA	National Electrical Manufacturer's Association
NFC	National Fire Code
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NRCA	National Roofing Contractors Association
NSF	National Sanitation Foundation
NSWMA	National Solid Wastes Management Association
NTMA	National Terrazzo & Mosaic Association
NWWDA	National Wood Window and Door Association
PCA	Portland Cement Association
PCI	Pre-stressed Concrete Institute
PDI	Plumbing and Drainage Institute
PEI	Porcelain Enamel Institute
PS	Product Standard

SBCCI	Southern Building Code Congress International
SDI	Steel Deck Institute
SDI	Steel Door Institute
SIGMA	Sealed Insulating Glass Manufacturing Association
SJI	Steel Joist Institute
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SPIB	Southern Pine Inspection Bureau
SPRI	Single Ply Roofing Institute
SSPC	Steel Structures Painting Council
TAS	Technical Air Series
TCA	Tile Council of America, Inc.
TCEQ	Texas Commission on Environmental Quality
TXDOT	Texas Department of Transportation
UBC	Uniform Building Code
UL	Underwriters Laboratories, Inc.
UPC	Uniform Plumbing Code
USDA	United States Department of Agriculture
USDC	United States Department of Commerce
USPS	United States Postal Service
WRI	Wire Reinforcement Institute
WWPA	Woven Wire Products Association

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. Implement a Quality Control Program to ensure that all work is performed in accordance with the Contract Documents and that substantiating documentation is provided.

1.2 SUBMITTALS

- A. Submit Quality Control Program Manual in accordance with PART 3 of this Section.
- B. Submit detailed Project Quality Control Plan if stated in the individual delivery order.
- C. Submit the Contractor's Quality Control Program Manual and Quality Control Project Plans to the Owner's Authorized Representative in Microsoft Word.

1.3 QUALITY ASSURANCE

- A. The Owner's Authorized Representative will perform periodic reviews and observations of the implementation of the Contractor's Quality Control Program. The Owner's testing and inspection efforts are conducted for the sole purpose of facilitating the Owner's acceptance of the constructed Work. Contractor retains total responsibility for Work.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 GENERAL

- A. Implement a Quality Control Program including review and approval of shop and/or working drawings, inspection of materials and workmanship, and coordinating testing by the Owner's Materials Testing Agency.

3.2 OWNER'S AUTHORIZED REPRESENTATIVE'S ROLE

- A. The Owner's Authorized Representative will approve the Contractor's Quality Control Program and monitor the activities of the Contractor to ensure its effectiveness and compliance with the stipulations within this Section. The Owner's Authorized Representative review does not relieve the Contractor of responsibility for development and implementation of a Quality Control Program or for full compliance with the provisions of the Contract Documents.

3.3 QUALITY CONTROL SYSTEM

- A. Submittal:
 - 1. Submit the Quality Control Program to the Owner's Authorized Representative for review and approval within 10 calendar days before beginning any work.
- B. Organization:

1. Designate one individual as the Quality Program Manager. The Quality Program Manager will have responsibility for the implementation of the Quality Control Program for the Contractor on all construction contracts. The Quality Program Manager shall have full authority to represent the company with respect to quality of the work and the Quality Control Program. The Quality Control Manager shall be a full-time employee of the contractor.
 2. If required by individual delivery order, provide a Quality Control Supervisor (aka Program Administrator – see General Provisions) with a minimum of five (5) years of extensive experience in administrating Quality Control Programs on projects of a similar size and nature. Experience and qualifications will be evaluated on a case-by-case basis to determine acceptability of individuals. The Quality Control supervisor is responsible for the implementation of the Quality Control Program for a specific Project or construction contract.
 3. Provide sufficient personnel to inspect the work and perform other Quality Control Program duties as necessary to oversee all Work, including shifts, quantity and location. Provide Quality Control Program personnel with applicable qualifications and experience. Submit the qualifications and work experience of all QC personnel to the Owner's Authorized Representative for review and approval. Similar documented experience in Quality Control for a contractor and for similar projects constitutes applicable experience. Refer to Construction Contract General Provisions, Quality Control Organization for further details on qualifications of the Contractor's Quality Control Program personnel.
- C. Approval:
1. The Owner's Authorized Representative will review the submission and respond within seven calendar days of receipt. Approval will be based upon qualifications, structure, understanding and experience. If approval is conditional, the Contractor will comply with the direction of the Owner's Authorized Representative.
 2. Once approved, the Quality Control Program personnel may not be replaced nor any changes made without prior written consent from the Owner's Authorized Representative.
- D. Activities:
1. Provide personnel to perform the following duties:
 - a. Field Activities:
 1. Inspect all field work in progress for compliance with the Contract Documents. Inform the Contractor and the Owner's Authorized Representative of any work that is in non-compliance as promptly as possible.
 2. Document all work activities by completing a Daily Construction Report for every contract day, in a format to be provided by the Owner's Authorized Representative.

Provide written reference to the Work that was in non-compliance.

3. Arrange for all necessary testing and retesting of work with the Owner's Materials Testing Agency or the Contractor's testing laboratory. Witness and review the tests and reports for conformance with the Contract Documents.
4. Formulate work lists for items requiring completion for any interim or substantial completion.
5. Approve all concrete placements using approved concrete placement cards.
6. Note any deficiency discovered, maintain records of all deficiencies and corrective action on an electronic format approved by the Owner's Authorized Representative. Provide prompt notification of any deficiency to the Owner's Authorized Representative and provide an updated file of the log at the weekly construction update meeting. Enter all deficiency information into the Owner approved Program Management software application.
7. Participate in all final inspections when construction has been completed and formulate and maintain work lists.
8. Participate in all meetings with the Owner's Authorized Representative as required for implementing an effective Quality Control Program.

b. Office Activities:

1. Review all submittals for compliance with the Contract Documents. Maintain record of all submittals using the Owner approved Program Management software application.
2. Review as-built conditions on the Contract Documents as per requirements of Section 01 78 39, Project Record Documents.
3. Provide all documentation of the Quality Control Program activities to the Owner's Authorized Representative.
4. Review Contractor's pay requests and maintain appropriate documentation for quality and acceptance of work being claimed.

3.5 QUALITY CONTROL PROGRAM MANUAL

- A. Prepare a Quality Control Program Manual for the Program. The manual shall be neatly organized, typed, and shall include but not be limited to the following:
 1. The Contractor's Quality Control Program objectives and stated policy.
 2. Organization and delegation of Quality Control authority to various Contractors' representatives.

3. Documentation and records required for implementing the Quality Control Program.
 4. Reports and forms to be submitted.
 5. Inspections requirements, arrangements, coordination, control and reporting.
 6. Testing requirements by the Contractor and required coordination with the Owner's Materials Testing Agency.
 7. Internal audits to ensure the personnel of the Contractor and subcontractors are completing tasks per Quality Control Program.
 8. Procedures for indoctrination and training of employees.
 9. Procedures for receiving and storage of permanent materials for the Quality Control Program.
- B. Submit Project Quality Control Plan for each construction Project. The Project Quality Control Plan is to describe:
1. Identify the Quality Control Supervisor to be assigned to the project
 2. Identify the Quality Control Technicians to be assigned to the project.
 3. Organization and delegation of Quality Control authority to various Contractors' representatives.
 4. Tabulation of all tests and inspections anticipated for the Project, and the anticipated schedule for these tests.
 5. Specific documentation and records that are required for implementing the Quality Control Plan for the Project.

3.6 FAILURE TO PROVIDE QUALITY MANAGEMENT SERVICES

- A. Repeated failures to comply with the requirements herein may result in the Owner's Authorized Representative implementing their own Quality Control Program. Such action will be at the sole discretion of the Owner's Authorized Representative. Cost for implementing the Quality Control Program will be deducted from the Contract Price.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. Where Quality Assurance (QA) tests of materials are required by the Contract Documents, the tests will be made by an Independent Testing Agency. Such tests will be performed by and at the expense of the Owner unless such Contract Documents specifically require the Contractor to bear the expense thereof.
- B. The Owner reserves the right to perform or require additional tests to be performed as may be deemed necessary or prudent to ensure that the Work is performed according to the requirements of the Contract Documents.
- C. The Contractor's Quality Control testing will also comply with the same specifications and all ASTM requirements.

1.2 REFERENCES

- A. ANSI/ASTM D3740 – "Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction."
- B. ANSI/ASTM E329 – "Standard Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction."

1.3 SELECTION AND PAYMENT

- A. Owner will employ and pay for services of an independent materials testing agency to perform specified quality assurance inspection and testing.
- B. Employment of materials testing agency shall in no way relieve Contractor of obligation to perform quality control testing at his expense, and perform work in accordance with requirements of Contract Documents.
- C. The failure of the Owner to make any tests of materials shall in no way relieve the Contractor of its responsibility of furnishing materials conforming to the Contract Documents.
- D. The Contractor has the ultimate responsibility to conform to the technical Specifications and conduct his own Quality Control Testing without relying on the Owner's Quality Assurance Testing.
- E. The Owner's Quality Assurance testing is only for acceptance of the furnished material and complete Work.
- F. The Contractor is responsible for Quality Control testing.

1.4 MATERIALS TESTING REPORTS

- A. After each quality assurance inspection and test, the Owner's Authorized Representative will promptly receive and transmit a copy of the materials test report to the Contractor. Materials test reports include: Date issued, the Project title and number, name of inspector, date and time of sampling or inspection, identification of product and all applicable specification paragraph(s), location in the Project, type of inspection or test, date of test, results of tests, and indication of conformance or non-conformance with Contract Documents.
- B. After each quality control test, the Contractor will promptly transmit a copy of the test results to the Owner's Authorized Representative. The test reports shall include the data as specified above.

1.5 TESTING AGENCY DUTIES

- A. Test samples of mixes submitted by Contractor.
- B. Provide qualified personnel at site. Submit credentials of proposed testing personnel to Owner's Authorized Representative for approval, indicating specific activities to which they will be assigned. Cooperate with Owner and Contractor in performance of services.
- C. Perform specified sampling and testing of products in accordance with specified standards.
- D. Ascertain compliance of materials and mixes with requirements of Contract Documents.
- E. Promptly notify Owner and Contractor of observed irregularities or non-conformance of Work or products.
- F. Perform additional tests and inspections required by Owner.
- G. Attend pre-construction meetings and progress meetings.
- H. Submit reports of all tests/inspections specified to Owner's Authorized Representative. Submit copies of all reports to other stakeholders as directed by the OAR.

1.6 LIMITS ON MATERIALS TESTING AGENCY AUTHORITY

- A. Agency may not approve or accept any portion of the Work.
- B. Agency may not assume any duties of Contractor.
- C. Agency has no authority to stop Work.
- D. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.

1.7 CONTRACTOR RESPONSIBILITIES

- A. Provide performance and Quality Control testing and inspection for all materials and workmanship. Performance and Quality Control testing is all testing over and above the acceptance testing performed by the Owner which is identified and described in the technical Specifications. The Contractor's testing agency will meet all of the requirements as specified in this section.
- B. Deliver to Independent Testing Agency at designated location adequate samples of materials proposed to be used, which require testing, together with proposed mix designs.
- C. Cooperate with Materials Testing Agency personnel, and provide access to Work and to material supplier's or manufacturer's facilities.
- D. Provide incidental labor and facilities to provide access to work to be tested by the Owner's Material Testing Agency (QA) to obtain and handle samples at the Site or at source of products to be tested, to facilitate tests and inspections, and for storage and curing of test samples.
- E. Notify the Owner's Authorized Representative at least twenty-four (24) hours prior to expected time of work operations requiring inspection and testing services.
- F. The Contractor shall provide such facilities as the Owner may require for collecting and forwarding samples and shall not use the materials represented by the samples until tests have been made.
- G. The Contractor shall not use any material before testing is complete, results are delivered to the Owner's Authorized Representative and the Owner gives approval in writing.
- H. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Owner. Payment for re-testing will be charged to the Contractor by deducting testing charges from the Contract or delivery order price.

1.8 SOURCE OF MATERIALS

- A. The Owner will be notified of the supply of major materials required before delivery is started.
- B. Representative samples shall be submitted for inspection or tests.
- C. The results obtained from testing such samples will be used for preliminary approval but will not be used as a final acceptance of the materials.
- D. The Owner may test all materials proposed to be used at any time during their preparation and use.

- E. Furnish approved material from another source if it is found that sources of supply, which have been approved, do not furnish a product of uniform quality, or if the product from any source proves unacceptable at any time. Pay additional cost for changing sources. Replace materials source to complete Project by the completion date.

1.9 IDENTIFICATION

- A. Label all required samples submitted by the Contractor for identification as agreed in coordination with the Owner's Authorized Representative.
- B. Store materials and/or equipment that have been inspected and/or tested in a controlled area with suitable identification referencing tests and certifications.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

- END OF SECTION -

GENERAL

1.1 SECTION INCLUDES

- A. Temporary utilities:
 - 1. Temporary electrical service, lighting, heating, cooling, and ventilating, telephone, water, and sanitary facilities
 - 2. Use of existing and permanent system
 - 3. Operation and maintenance
 - 4. Removal of temporary systems
- B. The installation and removal of temporary construction barricades per Section 01 56 23 – Temporary Barricades.
- C. Temporary Controls:
 - 1. Dust control
 - 2. Temporary erosion program
 - 3. Pollution control

1.2 TEMPORARY UTILITY SERVICE REQUIREMENTS

- A. Electrical: Power Source: Current Owner approved Electrical Service provider, Oncor Electric Delivery.
- B. Provide temporary lighting for field offices, storage facilities, shops, Work areas, circulation areas for personnel and other construction areas.
- C. Provide heating, ventilation and cooling:
 - 1. Maintain temperature, humidity, and ventilation in enclosed areas to provide ambient conditions for storage, preparation, and Work; to cure installed materials, to prevent condensation, and to prevent accumulations of dust, fumes and gases.
 - 2. During non-working hours, maintain temperature in enclosed areas at a minimum of 50 degrees F or higher as specified in individual Specifications.
- D. Arrange with local telephone service companies to provide direct line service to field offices.
- E. Provide water acceptable for use in its intended purpose.
 - 1. Potable water may be obtained from the Owner's existing service water facilities. Obtain water at locations approved by Owner's Authorized Representative. Provide meters to record water used.
 - 2. Submit the "Request for Water Service" form included at end of this section.
- F. Provide facilities at time of mobilization.

1.3 TEMPORARY UTILITY DISTRIBUTION

- A. Provide weatherproof distribution boxes with required outlets, fused switches and equipment grounds.

- B. Provide wiring, connections, and protection for temporary lighting.
- C. Provide wiring, connections, and protection for temporary and permanent equipment for environmental control, for temporary use of electrically operated equipment, and for testing.
- D. Provide valve controlled outlets located so that water is available under adequate pressure by means of hoses.

1.4 USE OF EXISTING SYSTEMS

- A. Existing mechanical and electrical systems may be used temporarily. Coordinate use with Owner's Authorized Representative for terms and conditions for use of systems in Owner occupied areas.
- B. Monitor usage to prevent interference with Owner's normal requirements. Notify Owner of any abnormal usage (volume, pressure, or duration).

1.5 USE OF PERMANENT SYSTEMS

- A. Obtain written agreement with Owner establishing start of warranty and conditions of use for:
 - 1. Completed systems with all utility connections and safety devices installed and operational.
 - 2. Completed systems that operate using automatic controls per the requirements of the Contract Documents.
 - 3. Filters and other protective devices for the equipment are in place and operational.
- B. Submit an Indoor Air Quality Plan Use of permanent systems will require to ensure air and water system cleanliness during construction.
- C. Use of Fire Hydrants:
 - 1. No person shall open, turn off, interfere with, attach any pipe or hose to or connect anything with any fire hydrant, stop valve, or stop cock, or tap any water main belonging to the Owner, unless authorized to do so by the Central Utilities Plant coordinated through the Owner's Authorized Representative and have an approved Request for Water service form on file.

1.6 COST OF TEMPORARY FACILITIES

- A. Obtain and pay for permits and inspections unless otherwise provided for in Contract.
- B. Pay all costs of installation of temporary utilities, materials, operation, maintenance and removal.
- C. Pay costs of energy consumed until beneficial occupancy unless provided for in Contract.
- D. Pay cost of water used. Water will be billed to Contractor at the prevailing rate per 1,000 gallons used.
- E. Owner will pay costs of fuel consumed in use of existing systems. Contractor will pay costs of fuel consumed by portable units.

- F. Pay cost of any temporary easements required across property other than that of the Owner.

1.7 VENDING MACHINES

- A. The Owner has exclusive vending Contracts in place within the Airport for food, snacks and beverages that pay a substantial sum of money to the Airport on an annual basis. Contractor's desiring to place vending machines on their sites at the Airport, shall coordinate all requests for placement of vending machines with the Concessions Department through the Owner's Authorized Representative. Prior to submitting an application to bring on any other vending sources, the Contractor must first receive a turndown in writing from the primary vending source(s). After turndown, the Contractor may ask for approval to place other vendor's equipment on the Airport. No vending equipment may be brought on to the Airport before receiving written approval from the Concessions Department.

PART 2– PRODUCTS

2.1 MATERIALS FOR TEMPORARY FACILITIES

- A. Provide new or used, adequate to the purpose.
- B. All Devices and equipment shall be standard devices, meeting Underwriter's Laboratory (UL) requirements.
- C. Telephone Equipment: Products of the local service company or specialty devices compatible with service company requirements.
- D. Provide Drinking Water Dispensers Supply a water meter as shown on the Drawings. Provide meters to which remote reading indicators can be added as a standard option and be equal to those manufactured by Hersey Products, Inc. Only those meters designed to be installed on fire hydrants will be approved for such use.
- E. Provide a backflow preventer on all temporary construction water services with a line sized backflow preventer equal to Beeco Model 6-C as shown on the Drawings. Install a test valve for facilitating a backflow prevention test.
- F. Provide enclosed portable toilet facilities, self-contained units, secluded from public view. Meet the requirements of state and local health regulations and ordinances.

PART 3– EXECUTION

3.1 TEMPORARY FACILITIES INSTALLATION

- A. Install initial services and facilities at time of site mobilization.
- B. Modify and extend systems as work progresses.
- C. Size piping to supply construction needs.
- D. Disinfect piping used for drinking water.
- E. Test backflow preventer assembly in conformance with DFW Airport Construction and Fire Prevention Standards Resolution (Section 312.9 of the Plumbing Code).

3.2 OPERATION AND MAINTENANCE

- A. Maintain systems to provide continuous service. Promptly replace worn or defective parts.

- B. Permanent heating, ventilation and cooling:
 - 1. Operate and maintain existing equipment being used; clean or replace filters and install filters in duct extensions as necessary to maintain work areas and finished areas in specified condition.
 - 2. Prior to operation of permanent equipment, verify that controls and safety devices are complete, equipment has been tested, and inspection made by authorities and approved for operation.
 - 3. Place zones of permanent HVAC system in operation sequentially as work progresses.
 - 4. Install temporary filters in air handling units and ducts, replace as necessary to prevent dust in equipment and ducts, to avoid contaminates in work of finished areas as set forth in the approved Indoor Air Quality Plan.
- C. Clean sanitary facilities twice per week, maintain in sanitary condition. Provide toilet paper, paper towels, and soap in suitable dispensers.
- D. Dispose of water or sewage in a satisfactory manner so that no nuisance is created and so that the Work under construction will be adequately protected.

3.3 TRAFFIC CONTROL PLAN

- A. Not Used

3.4 DUST CONTROL

- A. Provide positive methods and apply dust control materials to minimize raising dust from construction operations and provide positive means to prevent air-borne dust from dispersing into atmosphere.
- B. Maintain dust control measures, and upon the direction of the Owner's Authorized Representative, take necessary actions to abate any nuisance related to excessive dust caused or brought about by Contractor's work.
- C. Wet down materials and rubbish to prevent blowing dust.

3.5 EROSION CONTROL

- A. Plan and execute construction and earthwork by methods to control surface drainage from cuts and fills, and from borrow and waste disposal areas, to prevent erosion and sedimentation.
- B. Hold areas of bare soil exposed at one time to minimum. Provide temporary control measures such as berms, dikes, and drains.
- C. Construct fills and waste areas by selective placement to eliminate surface silts or clays, which will erode.
- D. Periodically examine earthwork to detect any evidence of start of erosion, apply corrective measures as required by pollution control.
- E. Refer to Section 01 57 13 – Storm Water Pollution Prevention.

3.6 POLLUTION CONTROL

- A. Provide methods, means and facilities required to prevent contamination of soil, water or atmosphere by discharge of noxious substances from construction operations.
- B. Perform emergency measures required to contain any spillage and to remove contaminated soil or liquids. Excavate and dispose of contaminated earth offsite and replace with suitable compacted fill and topsoil.
- C. Prevent harmful substances from entering public waters. Prevent disposal of wastes, effluence, chemicals or other substances adjacent to streams or in sanitary or storm sewers.
- D. Provide systems for control of atmospheric pollutants. Prevent toxic concentrations of chemicals. Prevent harmful dispersal of pollutants into atmosphere.
- E. Comply with Owner's Storm Water Pollution Prevention Plan (SWPPP) as shown on Contract Drawings.

3.7 WASTE DISPOSAL

- A. Refer to Section 01 74 19 – Construction Waste Management and Disposal.

3.8 REMOVAL OF TEMPORARY FACILITIES AND CONTROLS

- A. Remove temporary materials and equipment at completion of project.
- B. Restore existing and permanent equipment when used for temporary service to original condition.
- C. Remove underground installations to a depth of two (2) feet. Grade site as indicated.
- D. Replace temporary filters with new, clean, reusable filters after substantial completion.
- E. Remove meter and leave valve in place when temporary service has been supplied through a water main. Install coat valve and piping remaining with coal tar coating system in accordance with NAPCA (National Association of Pipe Coating Applicators) TF-2, TF-3, TG-2 or TG-3 specifications.
- F. Remove portable toilets when no longer needed.

PART 4– APPENDIX

4.1 Forms

- A. Request for Water Service

- END OF SECTION -

DALLAS-FORT WORTH INTERNATIONAL AIRPORT

P. O. Drawer 619428, Dallas-Fort Worth Airport, Texas, 75261-9428,

REQUEST FOR WATER SERVICE

PART I -- TO BE COMPLETED BY THE APPLICANT:

Contract No. Building Permit No.
Contract Title
Applicant's Name
Billing Address
Telephone Number () Fax Number ()
Authorized Signature of Applicant's Representative:
Date
Meter Location
Size Meter
Service Starting Date Water Line No.
Station No. Fire Hydrant No.
Equipment or Parts Needed

PART II -- TO BE COMPLETED BY THE OWNER:

Date Service: Initiated Terminated
Water Mfg. Serial No.
Register Capacity , Gallons () Cu. Ft. ()
Extra Equipment

PART III -- INSTRUCTIONS TO APPLICANT

A. Part I of this request should be completed by any party desiring water service from the Owner's water distribution system or who is entitled to the use of the same by contract. Request forms may be obtained by calling Airport utility personnel at (972) 574-6715. Copies of Applicant Instructions and Obligations relative to such services are available upon request at the Central Utilities Plant, Water Services Section.

B. This request shall be returned, with a cashier's check for the amount of \$500 (Five Hundred Dollars), to the Central Utilities Plant, Water Services Section between the hours of 7:00 a.m. - 3:30 p.m.; the check shall be made out to the D/FW International Airport Board. The check shall be held until such time as the applicant has completed the use of the Dallas-Fort Worth Airport Utilities Section facilities and turned over to the Utilities Section all equipment used in good condition. At such time the applicant's check shall be returned to the applicant by the Owner. If any equipment belonging to the D-FW Utilities Section is found to have been damaged while on loan to the applicant, the amount of damages shall be deducted from the check.

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section includes requirements for Contractor use of construction and storage areas, and includes the permit used to allow Contractor to use the Dallas/Fort Worth International Airport (DFW Airport) property.
- B. Indemnification of Owner for construction activities on Owner's property.

1.2 AGREEMENT

- A. It is understood and agreed that the Contractor, for itself, its agents, servants, successors, heirs, executors, administrators and assign, shall indemnify and hold harmless the DFW Airport BOARD, its agents, servants, successors, heirs, executors, administrators and assign, and all other persons, firms, corporations, association, or partnerships, from and against any and all claims, suits, demands, fines, penalties or causes of action, past, present or future, arising from or in any way connected with its operations, including but not limited to violation of the following:
 - 1. Resource Conservation Recovery Act (RCRA), as amended;
 - 2. The "Comprehensive Environmental Response, Compensation and Liability Act of 1980", as amended by the Super Fund Amendments and Reauthorization Act (CERCLA);
 - 3. Any other state, federal or local environmental statute, regulation or ordinance
- OR**
- 4. Release of any hazardous substance or solid waste onto, into or from the areas used by the Contractor or construction areas, regardless of whether the act, omission, event or circumstance constituted a violation of applicable law at the time of existence or occurrence.

PART 2 – PRODUCTS

2.1 PERMIT

- A. The attached "Authorization Letter" is to be filed with Design, Code and Construction.

PART 3 – EXECUTION

Not Used.

PART 4 – APPENDIX

- 4.1 The following documents/forms attached following "End of Section" are a part of the Specification.
 - A. Temporary Use of Land - Authorization Letter

- END OF SECTION -

Document Title: Contractor's Construction Area
Section: 01 52 00

Date:

[Company]
[Address]

**Re: Temporary Use of Land Located on Dallas/Fort Worth International Airport (the "Airport") Pursuant to Board Contract No. _____ (the "Contract")
By and Between Dallas/Fort Worth International Airport Board (the "Board") and
_____ (the "Contractor")**

Dear _____:

Notwithstanding anything to the contrary in the Contract, this letter will serve as Contractor's authorization to utilize on a temporary basis land on Airport located at _____ for a contractor staging area to support construction activities directly related to the Contract and for no other purposes. The attached Exhibit "A" denotes the approximate location of the land. This authorization covers the period from _____ to _____ as required to meet the terms and conditions of the Contract awarded by the Board.

This authorization and Contractor's occupancy of subject land shall be under same terms and conditions of the Contract, including without limitation those terms and conditions relating to indemnification and insurance.

Your authorization to temporarily utilize this land must at all times remain in compliance with the provisions of the Contract. Authorization does not constitute a lease of the area utilized nor does it create or imply a leasehold interest in any land located on Airport.

Should you violate any provision(s) of the Contract, the authorization granted by this letter will immediately terminate.

Should you have any questions, please do not hesitate to contact this office.

Sincerely,

DCC Complex Administrator
Design, Code and Construction Department.

PART 1 – GENERAL

1.1 STATEMENT OF POLICY

- A. It is the policy of the Owner to promote adequate and efficient vehicle services and operations at the Airport. To this end, Rules and Regulations for Parking Revenue Area (PRA) use are developed to protect the public health and safety, and promote public convenience and necessity, while minimizing adverse effect on public parking capacity and protection of revenues. Specifically, it is the policy of the Owner that all vehicles, including private vehicles, unless otherwise noted herein, shall enter and exit the PRA via the North and South Control Plazas.

1.2 FORMS

- A. The following permit application links and/or forms have been included with this Section for contractor's use, as applicable:
1. Air Operations Area (AOA) Access Permit
(<http://www.dfairport.com/badge/>), then link to the AOA badge option.
 2. DFW Airport Identification/Access Badge Application.
(<http://www.dfairport.com/badge/>), then link to the Identification/Access badge option.

1.3 AUTHORITY FOR ENFORCEMENT

- A. The Vice President Airport Operations is designated as the administrator of the Airport Vehicle Rules and Regulations to control PRA use. The Owner, may, by written order, establish procedures consistent with the Rules and Regulations which he determines necessary. The Airport Department of Public Safety shall be responsible for the enforcement of the Rules and Regulations.
1. Contractor may access the PRA via North Texas Tollway Authority (NTTA) Toll tags backed by a credit card. All fees are the contractor's responsibility.

1.4 FEE SCHEDULE

- A. Fees shall be as determined by the Owner.
- B. The PRA parking fees are established in the DFW Airport Board Schedule of Charges.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

PART 4– APPENDIX

- 4.1 The following documents/forms attached following “End of Section” are a part of the Specification.
- A. Air Operations Area Access Permit Instructions
 - B. Air Operations Area Access Permit Application
 - C. Temporary Air Operations Area Access Permit Application

- END OF SECTION -

AOA Vehicle Permits

Air Operations Area (AOA) access permits, commonly called "AOA Permits," are the means by which motor vehicles are authorized to enter and be on the AOA and the SIDA. To obtain an AOA permit, download and complete all requested information on the AOA permit application, attach a copy of your company's Acord Certificate of Liability Insurance as proof of insurance, then take the completed application to an authorized badge sponsor for signature before bringing the application to the ACO.

The following will help you determine which AOA permit application you need to complete:

1. Select the [Air Operations Area Access Permit](#) application when the following conditions apply:
 - a. Your company is an airline tenant, government agency, Airport concessionaire or the Airport Board; or
 - b. Your company is a contractor or vendor for an airline tenant, government agency, Airport concessionaire or the Airport Board whose contract/agreement expires on the last day of the calendar year (ex. Contract term begins on 05/15/2007 and expires on 12/31/07).
2. Select the [Temporary Air Operations Area Access Permit](#) application when the following condition apply:
 - a. Your company is a contractor or vendor for an airline tenant, government agency, Airport concessionaire or the Airport Board whose contract/agreement expires prior to the end of the last day of the calendar year (ex. Contract term begins on 01/01/2007 and expires on 09/30/2007)

Please make sure you allow two (2) to three (3) business days for application processing and permit issuance. The ACO will contact you via email or telephone when the permits are ready to be picked up.

AOA Vehicle Permit Insurance Requirements

All policies must be written through a licensed company authorized by the Texas State Board of Insurance to transact that class of insurance business in the State of Texas, with a minimum rating of 'A-' 'VII' by A. M. Best Company. If the rating of any insurer should fall below this standard, you shall cause the policy to be replaced promptly by an acceptable insurer.

Commercial General Liability (CGL) Limit Any One Occurrence \$ 1,000,000
CGL must be written on an "Occurrence Form."

Business Automobile Liability Combined Single Limit for Each Accident.....\$500,000
Coverage must apply to all vehicles (owned, non-owned, or hired) operating on our site/location, or transporting our people or property off our site.

Excess / Umbrella Liability Air Operations Area (within air operations area) \$10,000,000
Coverage must apply in excess of all required primary Liability insurance, and must be at least as broad as the underlying Liability insurance.

This coverage limit may be satisfied by adding the amounts of CGL and Excess/Umbrella Liability to arrive at a total of \$10,000,000. The same would be applicable for Business Auto Liability and Excess/Umbrella Liability to arrive at a total of \$10,000,000.

AIR OPERATIONS AREA ACCESS PERMIT APPLICATION

Department of Public Safety Access Control Office
Terminal D, Room D221352, 2333 International Parkway, DFW Airport, Texas 75261-0687
Phone: 972 973 5100 Fax: 972 973 5113

Company Name _____

Authorized Company Representative _____

Phone Number _____

Company Representative Email Address _____

Fax Number _____

Mailing Address: Street/PO Box _____ City _____ State _____ Zip Code _____

Vehicle Information:

License Plate Number _____

State of License _____

Vehicle Unit Number _____

Vehicle Model Year _____

Vehicle Make _____

Vehicle Model _____

Registered Owner of Vehicle: Last Name _____

First Name _____

Owner Mailing Address: Street/PO Box _____ City _____ State _____ Zip Code _____

☐ Company Vehicle ☐ Personal Vehicle

☐ Board/Signatory Airline/Government Agency ☐ Concessionaire

☐ Contractor ☐ Delivery Vendor Length of Contract/Agreement: From ____/____/____ To ____/____/____

Justification for AOA Access: _____

Authorized Badge Sponsor Signature _____

Signature Code _____

Printed Name of Authorized Badge Sponsor _____

☐ Proof of insurance attached

Note: Temporary AOA Access Permits must be displayed so that the expiration date is clearly visible through the front windshield of the vehicle. Violation of the Dallas Fort Worth International Airport Board Code of Rules and Regulations governing AOA access is grounds for revocation of the AOA Access Permit. AOA Access Permits will not be issued to vehicles that are not owned and registered to a company.

ACO Authorized Signature _____

Date _____

For Access Control Office Use Only

Permit number: _____ Permit expiration date: _____

Date received: _____ Date issued: _____ Issued by: _____

ACO-10 [TEMP] (10/07)

Document Title: CONTRACTOR USE OF PARKING REVENUE AREA (PRA)

Section: 01 55 20

TEMPORARY AIR OPERATIONS AREA ACCESS PERMIT APPLICATION

Department of Public Safety Access Control Office
Terminal D, Room D22L352, 2333 International Parkway, DFW Airport, Texas 75261-0687
Phone: 972 973 5100 Fax: 972 973 5113

Company Name _____

Authorized Company Representative _____ Phone Number _____

Company Representative Email Address _____ Fax Number _____

Mailing Address: Street/PO Box _____ City _____ State _____ Zip Code _____

Vehicle Information:

License Plate Number _____ State of License _____ Vehicle Unit Number _____

Vehicle Model Year _____ Vehicle Make _____ Vehicle Model _____

Registered Owner of Vehicle: Last Name _____ First Name _____

Owner Mailing Address: Street/PO Box _____ City _____ State _____ Zip Code _____

☐ Company Vehicle ☐ Personal Vehicle

☐ Board/Signatory Airline/Government Agency ☐ Concessionaire

☐ Contractor ☐ Delivery Vendor Length of Contract/Agreement: From ____/____/____ To ____/____/____

Justification for AOA Access: _____

Authorized Badge Sponsor Signature _____ Signature Code _____

Printed Name of Authorized Badge Sponsor _____

☐ Proof of insurance attached

Note: Temporary AOA Access Permits must be displayed so that the expiration date is clearly visible through the front windshield of the vehicle. Violation of the Dallas Fort Worth International Airport Board Code of Rules and Regulations governing AOA access is grounds for revocation of the AOA Access Permit. AOA Access Permits will not be issued to vehicles that are not owned and registered to a company.

ACO Authorized Signature _____ Date _____

For Access Control Office Use Only

Permit number: _____ Permit expiration date: _____

Date received: _____ Date issued: _____ issued by: _____

ACO-10 [TEMP] (10/07)

PART 1 – GENERAL

1.1 REQUIREMENTS INCLUDE:

- A. Public Safety
- B. Temporary Traffic Control Plan
- C. Temporary Traffic Control Devices
- D. Traffic Signage and Pavement Markings
- E. Traffic Control Signals
- F. Flagger Control
- G. Haul Routes
- H. Removal
- I. Vehicle Relocation Procedures
- J. Requesting Off-Duty Officers for Traffic Control

PART 2 – PRODUCTS

2.1 TRAFFIC CONTROL DEVICES

- A. Provide traffic control devices for street and highway construction, maintenance, utility, or incident management operations that conform to the current edition of the *Texas Manual on Uniform Traffic Control Devices* (Texas MUTCD) and AASHTO's *Roadside Design Guide*. The Texas MUTCD serves as the principal standard governing the application, design, and placement of traffic control devices.
- B. Provide a traffic control plan which describes temporary traffic control measures to be used for facilitating roadway users through work zones or incident areas in a safe and orderly manner.
- C. Provide signs, channelizing devices, portable changeable message signs, traffic barriers, cones, drums, and temporary pavement markings that comply to the Texas MUTCD.
- D. If deviating from the traffic control plan indicated in the contract documents, provide an engineering study to determine whether the installation of a traffic control signal is justified at a particular location. The study will include the analysis of the applicable factors contained in the traffic signal warrants listed in the Texas MUTCD.

PART 3 – EXECUTION

3.1 PUBLIC SAFETY

- A. Submit a traffic control plan to the Airport's Traffic Engineer for approval. Plan must be approved before any temporary traffic control devices are put in place. The Work is located on a major and operational airport. The Owner considers the safety, the orderly movement, and unrestricted flow of the traveling public and other users of the Airport, to be of the utmost importance, and, therefore, to be an essential part of the Contract. Public safety and convenience and provisions therefore, made necessary by the Work, shall be the direct responsibility of the Contractor and shall be performed at its own expense.

- B. Do not close any bridge, drainage facility, or any portion of the roadway to traffic except as designated in the approved traffic control plan or contract drawings. Sidewalks and other areas involving pedestrian movement shall remain open and accessible to pedestrians unless designated otherwise in the traffic control plan or Drawings.
- C. The Contractor shall coordinate with Owner's Authorized Representative for designated parking areas for each construction project.

3.2 TRAFFIC CONTROL PLAN

- A. The development and application of a well designed temporary traffic control plan can ensure safe mobility for all road users and safeguard for workers in a work zone
- B. Provide a sealed and signed traffic control plan for all work that displaces the traffic stream during construction, maintenance, and utility activities. Describe lane closures, shoulder closures, mobile closures, and any activities within the "clear zone", as defined by AASHTO's *Roadside Design Guide*. Specify traffic control devices and procedures necessary to protect workers and motorists, and to route motorists safely and efficiently through lane closures and work zones. Place traffic control signage within the road user's view so that maximum visual acuity is provided. Position signage with respect to location, orientation, height, and lateral clearance, as specified in the current edition of the Texas MUTCD.
- C. Address pavement drop-offs in work zones in the traffic control plan as specified by TxDOT's *Roadway Design Manual – Appendix B*. Appendix B addresses the proper treatment for different pavement drop-offs in work zones with respect to lateral clearance and condition of vertical drop.
- D. DPS Fire and Emergency response vehicles must have an adequate lane width for movements through a work zone. The absolute minimum lane width is 11 feet. Provide additional width along a road horizontal curve to provide to accommodate the path sweep and off-tracking of oversized vehicles.

3.3 TEMPORARY TRAFFIC CONTROL DEVICES

- A. Traffic control devices are all signs, signals, markings, and other devices used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, and pedestrian facility.
- B. Do not erect temporary traffic control devices prior to the placement of advance-warning signs.
- C. Maintain channelizing devices, and advance warning signs. Keep them clean, visible, in good condition, and properly positioned at all times. Replace damaged devices. Provide enough traffic control devices to replace any damaged devices during construction.
- D. Monitor traffic control component parts or the areas of a temporary traffic control work zone to ensure that traffic control measures are operating effectively and that all devices are clearly visible, clean and in good condition.
- E. Coordinate all traffic control work zones within the airport roadway network with the Airport's Traffic Engineer 72 hours prior to implementing a temporary traffic control. Airport's Traffic Engineer will coordinate with DPS, AOC, and the airport community,

F.

3.4 TRAFFIC SIGNAGE AND PAVEMENT MARKINGS

A. Provide traffic signs that comply with Part 2, Signs, and Part 6 of the Texas MUTCD

B. Provide traffic markings that comply with Part 3, Markings, of the Texas MUTCD

3.5 FLAGGER CONTROL

A. Provide Flagger's that meet the requirements of Chapter 6E of the Texas MUTCD Temporary Traffic Control.

B. Provide trained and equipped flaggers to regulate traffic when construction operations encroach on public traffic lanes or as specified in the temporary traffic control plan.

C. For daytime and nighttime activity, flaggers shall wear safety apparel meeting the requirements expressed in the Texas MUTCD.

D. Flaggers should be able to demonstrate the following abilities:

1. Receive and communicate traffic related instructions.

2. Control signaling devices to provide clear and positive guidance to drivers.

3. Understand and apply safe traffic control practices.

3.6 HAUL ROUTES

A. Use only established roadways or use temporary roadways constructed by the Contractor when and as authorized by the Owner. Do not load vehicles beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by and federal, state, or local law or regulation when materials are transported in prosecuting the Work. Protect curbs and sidewalks from damage. Repair any damaged curbs, sidewalks, or roads.

B. Notify the Owner in writing at least forty-eight hours prior to the movement of heavy equipment or wide or slow-moving vehicles to or from the Site. Adhere to vehicular routes established by the Owner.

3.7 REMOVAL

A. Remove all traffic control devices and equipment immediately when no longer required. Repair any damage caused by the installation of traffic control devices. Remove post setting to a depth of two feet.

B. Remove, cover or turn away traffic control devices from approaching traffic so the devices are not visible to drivers when work is suspended for short periods or that are no longer appropriate for the conditions.

3.8 VEHICLE RELOCATION PROCEDURES

The following procedures are established in order to relocate legally parked vehicles in public parking facilities operated by the Airport Board due to construction.

A. Post a "30 Day Closure Notice" sign at the entrance to the parking facility. Sign specifications are available from the DFW Sign Shop.

- B. If the closure involves only a section of the parking facility, the signs should be posted in the affected area to delineate closure of the specific section. Cones, barrels, tape, barricades or any combination thereof may be used to secure vacant spaces.
- C. If vehicles have not been removed after 30 days, the DFW Project Manager will ensure that the Contractor:
 - 1. Contact the Board's contract wrecker service 48 hours in advance to ensure the company has adequate staffing.
 - 2. Barricade the entrance to prevent additional vehicles from parking if the entire lot is involved.
 - 3. Ensure that before and after photographs are taken of vehicles that will be relocated.
 - 4. Create a vehicle log that includes the color, make, model, license plate number and document any existing damage.
 - 5. Note the location where the vehicle was parked and to where it has been relocated. Relocation should be as close as practical to the original location.
 - 6. If relocating vehicles at Remote Parking, notify Guest Services at (972) 973-4840.
 - 7. If relocating vehicles parked at Express Parking, notify Parking Contract Bussing at (972) 574-0370 and AMPCO at (972) 574-7414.
 - 8. If relocating vehicles parking at the Employee Parking Lots, notify Parking Contract Bussing at (972) 822-7704.
 - 9. Fax a copy of the vehicle log to DPS Communications at (972) 973-3194, DPS Project Planning & Management Division at (972) 973-3597, DFW Customer Service at (972) 574-0342, Parking Guest Relations at (972) 973-4841, South Parking Control Plaza at (972) 973-3816, North Parking Control Plaza at (972) 973-3806 and the Airport Operations Center (AOC) at (972) 973-3188.

3.9 REQUESTING OFF-DUTY OFFICERS FOR TRAFFIC CONTROL

- A. This section contains information and instructions on the proper procedures used to request Off-Duty Police Officers for traffic control purposes.
- B. Procedures:
 - 1. Conduct work in accordance with a Traffic Control Plan submitted and approved by the DFW Airport Traffic Engineer. The DFW Airport Traffic Engineer can be contacted at (972) 973-1783 to assist with this process.
 - 2. Attend the weekly Traffic Control Coordination Meeting to discuss the project scope and the need for Off-Duty Police Officers. Traffic related project must be included in the weekly Traffic Advisory that is maintained and distributed to the Airport Community by DFW DPS.
 - 3. Submit a formal request for off-duty police officers to the Project Planning & Management Division Commander at DPS Station 1. Pay for off-duty police officers.

4. The Project Planning & Management Division Commander or designee will review the request and may consult the DFW Traffic Engineer to insure that the Traffic Control Plan complies with all applicable laws/ordinances.
 5. The Project Planning & Management Division Commander retains the right to approve or reject the utilization of Off-Duty Police Officers. The determination is based on public safety and proper implementation of the Traffic Control Plan per legal/industry standards – Texas MUTCD.
 6. Once authorization has been granted, the Project Planning & Management Division Commander will notify the Off-Duty Coordinator to process the request and initiate the off-duty job notification.
 7. If there are any questions concerning these procedures, changes or cancellations for Off-Duty Police Officers, please contact the DPS Desk Sargent at (972) 973-3533.
- C. Additional information and responsibilities for Contractors:
1. Attend the weekly Traffic Control Coordination Meeting is held in the Design, Code and Construction Department Building located at 3003 S. Service Road., DFW Airport. The DFW Traffic Engineer facilitates this meeting every Monday at 10:00 a.m.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. Provide a temporary staging yard.
- B. Provide an Erosion Control Plan (ECP) or a Storm Water Pollution Prevention Plan (SWPPP) the Contractor staging yard if the yard is not already included in a project ECP or SWPPP.
- C. It must be stated in the prime contractor's Airport Board contract that a staging yard, on Airport Board property, will be provided to them, if needed, to support construction activities directly related to that contract. Airport staging yards shall not be used for the storage of chemicals, materials, and equipment related to offsite work.
- D. Comply with the EAD Administrative Policy Staging Yard Authorization and Utilization procedures. All staging yards will be assigned by the Environmental Affairs Department (EAD.)
- E. Comply with the 2009 International Building Code (IBC), 2009 International Fire Code (IFC) and Local Amendments.

1.2 RELATED REQUIREMENTS

- A. Section 01 52 00, Contractor's Construction Area
- B. Section 01 57 13, Temporary Erosion and Sediment Control
- C. Section 01 57 19.13, Spill Response
- D. Section 01 57 19.23, Construction Site Spill Prevention
- E. Section 01 74 19, Construction Waste Management and Disposal

1.3 DEFINITIONS

- A. OAR: Owner's Authorized Representative
- B. Final Stabilization: A construction site status where all soil disturbing activities at the site have been completed and a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as crushed stone, riprap, gabions, or geotextiles) have been employed.
- C. Temporary Structure: A portable building, conex, or shade structure that will be onsite less than ninety-one (91) days from the date of the letter of authorization.
- D. AHJ : Authority Having Jurisdiction shall include all relevant DFW Airport Departments

1.4 SUBMITTALS

- A. Site Plan: After coordinating with EAD submit to the PM a proposed site plan. The site plan shall be reviewed by the AHJ. Note: There is a 10 day review process. The site plan shall show at a minimum the following.
 - 1. Proposed location(s) and dimensions of any area to be fenced and used by Contractor for staging.

2. Location and dimensions of each temporary and permanent structures.
 3. Avenues of ingress and egress.
 4. Details of the fence and gate installation. Comply with IFC 2009 Chapter 506 which requires a Knox Lock at all gates to grant access to Emergency Personnel.
 5. Methods or devices use at exits to prevent the tracking of mud.
 6. Location of material storage areas.
 7. Location of equipment storage, and vehicle parking.
 8. Location of areas for fuel storage, fueling operations
 9. Locations for vehicle or equipment maintenance, including areas for washing of equipment.
 10. Location of storm drains and drainage channels that could receive runoff from the staging area.
 11. Subcontractors or others that will share the yard.
 12. Location and methods of containment for any flammables, chemicals or hazmat materials that will be stored on site. Include MSDS for all of these materials.
- B. Obtain approval of OAR for subcontractors or others that will share the yard.
- C. Provide a fire alarm system monitored by an outside agency for buildings over 1,000 square feet. Obtain a determination from the Fire Marshal and Code Officials if a fire alarm or other measures must be taken to insure life safety for Structures less than 1,000 square feet.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 STAGING YARD

- A. Provide signs at the entrance to the staging yard which include:
 1. The name of the Prime Contractor and all Subcontractors.
 2. Address (assigned by Code Compliance)
 3. The Prime Contractor's 24 hour emergency contact number.
- B. Project(s) Identifiers: Permit Number, Project Name, Contract Number, SWPPP and NOI notices.
- C. A copy of the contractor Material and Chemicals list and the Construction Staging Yard Application (which includes a list of material and chemicals to be stored) shall always be available at the staging yard.
- D. Implement erosion control measures in accordance with Section 01 57 13, Temporary Erosion and Sediment Control.
- E. Arrange for a Life Safety Inspection by Code Compliance after setup, after tear down and annually while the staging yard is in operation.

- F. Enclose area with a security fence.
- G. Establish an all weather access road to ensure emergency equipment access to structures, and material and equipment storage areas in accordance with Chapter 5 of the 2009 IFC. Obtain approval of roads from Building Officials and the Fire Marshal and DFW Building Code.
- H. Install construction exits in areas of ingress/egress, equipment service areas, and in parking areas to prevent rutting and the tracking of mud. Comply with Section 01 57 13 Storm Water Pollution Prevention.
- I. Obtain approval of separate and distinct storage areas, including employee parking from the OAR and EAD.
- J. Design and construct temporary and permanent structures in accordance with the 2009 International Building Code (IBC), 2009 International Fire Code (IFC), and Local Amendments.
- K. Obtain General Work Permits per 2009 IFC Chapter 105 from the Fire Marshal.
- L. Stockpile all materials inside the Contractor staging area.
- M. Provide each entrance to the primary staging area or all separate or distinct storage areas with an appropriate Knox Box in a location approved by the Fire Marshal in accordance with IFC 2009 Chapter 506. Provide a key to each structure inside the Staging Yard in the Knox. Order boxes through the Fire Marshal's office.
- N. Park all mobile construction equipment within the Staging Yard at the end of each day.
- O. Store salvageable materials resulting from demolition activities within the staging yard or at a supplemental storage area approved by EAD in accordance with the ECP/SWPPP.
- P. Stack stored materials and products off the ground within the staging area. Maintain stored materials and products in a neat and orderly method that allows ready access to materials and products.
- Q. Follow IFC 2009 guidelines when using or storing Hazardous Flammable or Combustible Materials. Specifically reference Chapter 34 which requires the NFPA 704 Placard and proper labeling of all products. Store drums and containers off the ground and on pallets. Properly seal containers and label. Provide secondary containment as appropriate.

3.2 MAINTENANCE OF STAGING AREA

- A. Maintain fence in good repair and proper alignment.
- B. Comply with IFC 2009 Chapter 3 which includes the following general precautions against fire: maintain vegetation, establish designated Smoking Areas, post No Smoking signs, provide orderly storage, and remove construction debris, waste, and packing materials from the staging area before it becomes a nuisance / fire hazard.
- C. Check staging area daily for spills, standing water, and other sources of contamination. Immediately implement reporting and removal procedures when found. Comply with Section 01 57 19.13 Spill Response.

- D. Properly clean dirt or mud that becomes tracked out of staging yard onto paved or surfaced roadways A.S.A.P.(within the same work day) and eliminate the source.
- E. Maintain all weather roads to ensure emergency equipment access to structures, and equipment and material storage areas. Repair potholes and ruts as they occur.

3.3 RESTORATION OF STAGING AREA

- A. Return the site to acceptable condition as determined by the AHJ at Substantial Completion.
 - 1. Remove all structures, materials and equipment from within the staging area.
 - 2. Remove all fencing and fence posts, as directed by the AHJ.
 - 3. Fill all holes and depressions.
 - 4. Remove all gravel, and apply top soil and seeding as needed to restore the site to a stabilized condition, unless otherwise directed by the AHJ.

3.4 CLOSURE

- A. A Final Stabilization inspection from the AHJ is required before being approved for Construction Permit Closure.
- B. A Fire and Life Safety Final Inspection will be conducted by the Building Official and Fire Marshal to determine if the site meets all relevant codes.
- C. The Owner may, at their discretion not required staging area to be demobilized and restored if the staging yard is to be utilized to support in-progress Airport projects.
- D. New Contractor will be required to fulfill all of the guidelines to insure the staging area is maintained and updated if the Prime Contractor for the staging yard changes.
- E. The Contractor may transfer the construction staging yard responsibilities into the most current project storm water plan when Contractor is working on more than one prime contract on the Airport which necessitates a construction staging yard
- F. The AHJ will make all interpretations of codes and guidelines, and will make the final determination. The Construction Permit Closure shall not be granted until all AHJ requirements have been satisfied.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. This specification describes procedures and practices to minimize or eliminate discharge of concrete truck washout waste to storm drain systems or watercourses.
- B. The Contractor will oversee and enforce concrete waste management procedures, in cooperation with the Owner's Authorized Representative (OAR) and the DFW Airport Environmental Affairs Department (EAD).
- C. The Board may supply a concrete truck washout bin to the project under separate contract. EAD will determine if a project meets the requirements to receive a concrete washout bin. This is determined based on the size of the project, amount of concrete to be poured, and location of the project.
- D. All requests for delivery of a bin, services to a bin or removal of a bin shall be coordinated through designated EAD staff in charge of the contract (EAD contract). A minimum of 48 hours (two working days) notice is required in order to deliver, remove excess water, move, replace, or remove a bin. Contractor shall plan pour activities, use the bin correctly and notify the designated EAD staff appropriately or continued use of a Board supplied washout bin may be denied and the contractor will have to make other arrangements.
- E. The only materials allowed to be placed in the bin are concrete waste and water from concrete mixer trucks, pump trucks, mixers, chutes, tools, and wheelbarrows. **Concrete slurry waste from sawcutting, grinding, and grooving is not allowed to be placed in the bin.**
- F. If it is determined by the OAR and EAD that a Board supplied concrete truck washout bin will not be provided, a temporary concrete truck washout container shall be constructed by the contractor.

1.2 RELATED REQUIREMENTS

- A. Section 01 57 13, Temporary Erosion Control
- B. Section 01 74 19, Construction Waste Management and Disposal

1.3 DEFINITIONS

- A. OAR: Owner's Authorized Representative.
- B. PCC: Portland cement concrete.
- C. AC: Asphalt concrete.

1.4 SUBMITTALS

1.5 Concrete truck washout waste shall be listed and the handling and disposal plans clearly detailed in the project Waste Management Plan. CONCRETE TRUCK WASHOUT WASTE MANAGEMENT APPLICABILITY

- A. Educate employees, subcontractors, and suppliers on concrete truck washout waste management techniques described in this Section.
- B. Implement concrete truck washout waste management procedures and practices on construction projects where:

1. Concrete is used as construction material.
2. Concrete trucks and other concrete-coated equipment are washed on site.
3. Mortar mixing stations exist on site.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 CONCRETE TRUCK WASHOUT WASTE – BOARD SUPPLIED BIN

- A. Do not move or shift the bin in any way as this may cause damage. Damage caused to the washout bin shall be paid by the contractor to the owner of the bin directly. Damages not paid shall be deducted from the contractor's contract with the Airport Board.
- B. Written approval from an Airfield Operations Officer is required for projects requesting bin placement on the Airfield. It is the contractor's responsibility to work with the Airfield Operations Officer to select a suitable location on the Airfield for the bin. Approval shall be sent in the form of an email to the designated EAD representative 48 hours prior to placement of the box.
- C. Perform washout of concrete mixer/pump trucks in designated concrete truck washout bin only.
- D. Assign personnel to monitor the washout activities of mixer trucks and pump trucks during pour events in order to prevent over filling or breach of the concrete truck washout bin and control overspray that may occur during washout activities.
- E. Notify the designated EAD representative that Board supplied concrete truck washout bin needs to be removed.

3.2 CONCRETE TRUCK WASHOUT WASTE – TEMPORARY CONCRETE TRUCK WASHOUT CONTAINER

- A. Locate temporary concrete truck washout container a minimum of 15m (50 feet) away from and down gradient from storm drain inlets, open drainage facilities, and watercourses, unless determined infeasible by the OAR. Locate each container away from construction traffic or access areas to prevent disturbance or tracking.
- B. Verify the temporary concrete truck washout container to be used and location to be placed is suitable for AOA prior to placement. Airport Operations may reject materials or location requiring the need to dismantle, remove or relocate the washout structure.
- C. Ensure temporary concrete truck washout container is of sufficient volume to completely contain liquid and concrete waste materials generated during washout procedures as well as a significant amount of rainfall. Container must be watertight. Use vacuum trucks to remove water from the container if an unusual amount of rain would result in the container overflowing.

- D. A temporary concrete truck washout pit in the ground shall have a bermed perimeter and be lined with plastic sheeting of at least 10-mil thickness with no holes or tears. The perimeter berm may be constructed of soil, hay bales, straw socks, wood framing or other suitable material that will hold the form of the structure. Certain materials are banned for use on the AOA.

3.3 DISPOSAL

Once concrete truck washout wastes are washed into the designated container and allowed to harden, concrete shall be broken up, removed, and disposed of in accordance with Section 01 74 19, Construction Waste Management and Disposal.

3.4 MAINTENANCE AND INSPECTION

- A. Monitor concrete truck washout bin or temporary concrete truck washout container weekly or as directed by the OAR.
- B. Maintain concrete truck washout bin or temporary concrete truck washout container to provide adequate holding capacity with a minimum freeboard of 300 mm (12 inches), and protect from storm water runoff.
- C. For Board supplied washout bin, notify the designated EAD representative with sufficient time to remove excess water or remove and replace the bin in order to maintain capacity and functional condition.
- D. Verify the Board supplied washout bin has not been moved or damaged. Immediately notify the designated EAD representative upon discovery.
- E. Remove and dispose of hardened concrete from temporary concrete truck washout container to maintain functional condition. May either clean existing temporary concrete truck washout container construct new container once washout is 75 percent full of solids.
- F. Remove any washout residue from the surrounding ground surface that occurs.
- G. Repair damaged temporary concrete truck washout container immediately.

3.5 REMOVAL OF TEMPORARY CONCRETE WASHOUT FACILITIES

- A. Remove materials used to construct temporary concrete truck washout containers from the site of the work, and dispose of in conformance with the provisions of Section 01 74 19, Construction Waste Management and Disposal.
- B. Backfill holes, depressions, or other ground disturbance caused by the removal of the temporary concrete truck washout container to original elevations. Repair associated damages as directed by the OAR.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades required by governing authorities for public rights-of-way and for public access to adjacent building.
- C. Provide protection for plant life designated to remain. Replace damaged plant life.
- D. Protect non-owned vehicular traffic, site and structures from damage.

1.2 DESCRIPTION

- A. Furnish, install and maintain suitable barriers as required to prevent public entry, and to protect the work, existing facilities, trees and plants from construction operations; remove when no longer needed, or at completion of Work.

1.3 QUALITY ASSURANCE

- A. Barriers and Construction Signs shall comply with federal, state and local codes and all regulations pertaining to traffic control devices and construction sign regulations.
- B. Provide barriers and construction signing as required or deemed necessary to protect the work area and traveling public, as indicated on the Drawings, or as directed by the Owner's Authorized Representative for work in the ramp areas to protect tug traffic, aircraft, airline personnel and other assets in the active airfield during construction of the this project. Plan, execute and maintain barriers, traffic control devices, etc.

PART 2 – PRODUCTS

2.1 MATERIALS, GENERAL

- A. Provide fixed signs as shown on the Traffic Control Plan Drawings and conforming to the latest edition of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install barriers and controls to a uniform appearance, structurally sound and adequate for the purpose intended.
- B. Maintain barriers during entire construction period as required for each area.
- C. Relocate barriers as required by progress of construction.

- D. Install concrete traffic barriers (CTB) in accordance with the Traffic Control Plan Drawings and as directed by the Owner's Authorized Representative.
- E. Cover trenches and holes when not in use. Erect barriers at sharp changes in plane compliance with OSHA Regulations.

3.2 REMOVAL

- A. Completely remove barricades when construction has progressed to the point that they are no longer needed, and when approved by Architect/Engineer.
- B. Clean and repair damage caused by installation if any, fill and grade the areas of the site to required elevations and slopes, and clean the area.

- END OF SECTION -

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

- 1. Chain-Link Fences:** Used for temporary storage, security, job site access, etc.
- 2. Gates:** Lockable and manually operated.

1.2 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide chain-link fences and gates capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

- 1. Minimum Post Size and Maximum Spacing for Wind Velocity Pressure:** Determine based on mesh size and pattern specified, and on the following minimum design wind pressures and according to CLFMI WLG 2445:
 - a. Wind Speed:** 80 mph.
 - b. Fence Height:** As required per the project requirements.
 - c. Line Post Group:** ASTM F 1043.
 - d. Wind Exposure Category:** B
- 2. Determine minimum post size, group, and section according to ASTM F 1043 for framework up to 12 feet high, and post spacing not to exceed 10 feet.**

B. Lightning Protection System: Maximum grounding-resistance value of 25 ohms under normal dry conditions.

1.3 SUBMITTALS

A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for chain-link fences and gates, if stated in the project requirements.

- 1. Fence and gate posts, rails, and fittings.**
- 2. Chain-link fabric, reinforcements, and attachments.**
- 3. Gates and hardware.**
- 4. Manual gate operators.**
- 5. Accessories:** Refer to plans.

B. Product Certificates: For each type of chain-link fence and gate, signed by product manufacturer.

- 1. Strength test results for framing according to ASTM F 1043.**

- C. Qualification data for installer.
- D. Field quality-control test reports.

1.4 QUALITY ASSURANCE

- A. **Installer Qualifications:** An experienced installer who has completed chain-link fences and gates similar in material, design, and extent to those indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

1.5 PROJECT CONDITIONS

- A. **Field Measurements:** Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work

2.2 FITTINGS

- A. **General:** Comply with ASTM F 626.
- B. **Post and Line Caps:** Provide for each post.
 - 1. Line post caps with loop to receive tension wire or top rail.
- C. **Rail and Brace Ends:** Attach rails securely to each gate, corner, pull, and end post.
- D. **Finish:**
 - 1. Galvanized steel.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. **Examine areas and conditions,** with Installer present, for compliance with requirements for conditions affecting performance.

3.2 INSTALLATION, GENERAL

- A. Install chain-link fencing to comply with ASTM F 567 and more stringent requirements specified.
 - 1. Install fencing on established boundary lines inside the project boundary and/or designated area.

3.3 CHAIN-LINK FENCE INSTALLATION

- A. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.
- B. Post Setting: Set posts to provide a stable and safe upright position.
 - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
 - 2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
 - a. Exposed Concrete: Extend 2 inches above grade; shape and smooth to shed water.
 - b. Concealed Concrete: Set posts below grade as indicated on Drawings to allow covering with surface material.
 - c. Posts Set into Concrete in Sleeves: Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions, and finished sloped to drain water away from post.
 - 3. Mechanically Driven Posts: Drive into soil to depth of 30 inches. Protect post top to prevent distortion.
- C. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment as indicated on the drawings.
- D. Line Posts: Space line posts uniformly at 8 feet o.c.
- E. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Install braces at end and gate posts and at both sides of corner and pull posts.
 - 1. Locate horizontal braces at mid height of fabric 6 feet or higher, on fences with top rail and at 2/3 fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.

- F. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c. Install tension wire in locations indicated before stretching fabric.
 - 1. Top Tension Wire: Install tension wire through post cap loops.
 - 2. Bottom Tension Wire: Install tension wire within 6 inches (150 mm) of bottom of fabric and tie to each post with not less than same diameter and type of wire.
- G. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.
- H. Bottom Rails: Install, spanning between posts.
- I. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 1 inch between finish grade or surface and bottom selvage, unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
- J. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches o.c.
- K. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at 1 end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
 - 1. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces at 24 inches o.c.
- L. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side.
- M. Privacy Slats: Install slats in direction indicated, securely locked in place.
- N. Barbed Wire: Install barbed wire uniformly spaced as indicated on Drawings. Pull wire taut and install securely to extension arms and secure to end post or terminal arms.

3.4 GATE INSTALLATION

- A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.5 GATE OPERATOR INSTALLATION

- A. General: Install gate operators according to manufacturer's written instructions, aligned and true to fence line and grade.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Provides guidelines for adherence to DFW Airport Board policy, state, federal, and local environmental regulations pertaining to prevention of sediment from construction activities entering storm water systems, including open channels.
- C. The work shall consist of furnishing and installing erosion and sediment control materials within project limits and in areas outside the project limits where the soil surface, grass, vegetation, or impervious surfaces are disturbed from work under this contract at the designated locations. This work shall include all necessary materials, labor, supervision, and equipment for installation of a complete system.
- D. Adhere to all requirements of the applicable TCEQ Storm Water Construction General Permit, also known as the TPDES General Permit TXR15000 (the General Permit), along with any specific storm water requirements of DFW Airport.
- E. The DFW Airport specific requirements of an Erosion Control Plan (ECP) shall be met. DFW Airport will provide a template for the ECP as necessary.

1.2 REFERENCES

- A. Texas Water Code, Chapter 26
- B. Clean Water Act, Section 402
- C. National Pollutant Discharge Elimination System
- D. Texas Pollutant Discharge Elimination System

1.3 RELATED SECTIONS

- A. Section 01 41 00, Regulatory Requirements: Required for Environmental Protection.
- B. Section 01 74 19, Construction Waste Management.

1.4 DEFINITIONS

- A. BMP: Best Management Practices.
- B. CM: DFW Airport Construction Manager.
- C. CGP: Construction General Permit.
- D. Common Plan or Development: A construction activity that is completed in separate stages, separate phases, or in combination with other construction activities. A common plan of development is identified by the documentation for the construction project that identifies the scope of the project, and may include plats, blueprints, marketing plans, contracts, building permits, a public notice of hearing, zoning requests, or other similar documentation and activities.
- E. CSN: Construction Site Notice.
- F. EAD: DFW Airport Environmental Affairs Department.
- G. ECP: Erosion Control Plan.
- H. NOI: Notice of Intent – A written submission to the executive director from an applicant requesting coverage under a general permit.
- I. NOT: Notice of Termination – A written submission to the executive director from a permittee authorized under a general permit requesting termination of coverage.
- J. SWPPP: Storm Water Pollution Prevention Plan.
- K. TCEQ: Texas Commission on Environmental Quality.
- L. TPDES: Texas Pollutant Discharge Elimination System.

1.5 SUBMITTALS

- A. Provide product data and certification that the products to be used for erosion and sediment control measures comply with the requirements of this Section.
- B. Prior to the issuance of the DFW Airport Construction or Sign Permit, the contractor shall provide the necessary information and required environmental related plans to the Airport Board EAD office, with a copy being filed with the CM. A meeting will be held with EAD and the Contractor to complete the Environmental Compliance Checklist discussing project specific details. The environmental related plans to submit will be determined at that time.
- C. Prepare and submit to the EAD office, with a copy being filed with the CM, a site-specific Erosion Control Plan (ECP) for projects disturbing less than one acre.

D. Prepare and submit a site-specific Storm Water Pollution Prevention Plan (SWPPP) to the EAD office, with a copy being filed with the CM, for projects disturbing on acre or more. A copy of the SWPPP, the original Construction Site Notice, and Notice of Intent (if applicable), must be submitted to the EAD office, with a copy being filed with the CM, as part of the Construction Permit Application review process prior to obtaining construction permit approval and prior to beginning construction activities.

E. Prepare and submit the appropriate version of a Construction Site Notice (CSN) for the size of disturbance. Projects that will disturb 1 acre or greater, but less than 5 acres submits the CSN for Small Construction Sites. Projects that will disturb 5 acres or greater submits the CSN for Large Construction Sites. Once approved by EAD, the CSN must be posted at the project site in accordance with the SWPPP. EAD will provide a copy of the DFW Airport's CSN for posting.

F. Prepare and submit a Notice of Intent (NOI) to the EAD office, with a copy being filed with the CM, for projects that will disturb 5 acres or greater. Submission of the NOI and payment of filing fees will be coordinated with EAD. All documents that require mailing to the TCEQ shall be submitted to EAD to perform the mailing. TCEQ offers filing a paper copy by mail and an electronic application through TCEQ's online STEERS program. For a paper NOI, submit to the EAD office the original NOI signed in blue ink, with a check (payable to TCEQ) in the amount of \$325 to cover the permit application fee. This fee is subject to change by TCEQ at any time. Following the review and approval of the NOI, EAD will mail the NOI form and check to TCEQ. A copy of the NOI shall remain posted at the job. The TCEQ NOI, with instructions, may be obtained from the TCEQ website. EAD will provide contractor with a copy of the DFW Airport's NOI. If filing electronically online, submit a copy of an NOI form or print a copy of the information electronically entered, but before officially "signing" or "paying" on the TCEQ application site (STEERS). After review and approval for completeness and accuracy of information, only then may the Contractor perform the electronic signing and payment that completes the electronic submission to TCEQ. The Contractor must provide to EAD a copy of the Notice of Coverage, Permit Certificate and confirmation of payment received back from the TCEQ. EAD will provide a copy of the DFW Airport's Notice of Coverage and Permit Certificate to the Contractor to keep in the project SWPPP documents.

G. ECP or SWPPP Inspection Reports: Within 48 hours after completing the inspection, submit copies, signed and certified by the Contractor's site superintendent, or the delegated inspector, to the CM. At closeout, copies of all inspection reports are to be submitted to the EAD office as part of closeout documentation.

H. Onsite Contact Person: The name and cell phone, or pager number of a person responsible for implementing the ECP or SWPPP must be provided to

DFW EAD and a copy to the CM before the permit is issued to ensure a contact point for potential problems during construction. This person needs to have the authority to direct resources to maintenance or repair of the storm water management controls as necessary during the project and should be readily accessible onsite during work hours.

I. Within 25 days of final stabilization, as defined as condition (a) in Part I. Definitions of the TPDES Construction General Permit (TXR150000), and as provided in Section 02922, Seeding and Sodding, submit the following documents to the EAD office, with a copy being filed with the CM for the permanent project file:

1. One copy of the final SWPPP that includes all inspection reports, maintenance records and any amendments.
2. For sites where a NOI was required, a completed, signed Notice of Termination (NOT) of coverage (TCEQ Form 20023). TCEQ offers paper by mail as well as electronically filed versions. Paper NOIs shall be submitted to the EAD office. Under no circumstances is the Contractor to submit their electronic NOT directly to TCEQ without prior approval of closure by EAD. Both the Airport's and contractor's NOT shall be submitted at the same time after EAD has reviewed job site conditions and agrees final stabilization conditions are met. EAD will then mail in the Contractor's paper NOI or will approve the Contractor to officially submit the electronic NOI on the TCEQ website.

J. If hazardous waste material is collected and disposed of, submit copies of the appropriate manifests.

1.6 CONTRACTOR-AUTHORED PLANS

A. Erosion Control Plan (ECP): An ECP template has been prepared by DFW Airport and may be obtained from the EAD office or the CM. Include, at a minimum:

1. A complete description of the site, including:
 - a. A general location map;
 - b. A site map indicating drainage patterns and approximate slopes after major grading activities; area of soil disturbance, areas which will not be disturbed, locations of structural and nonstructural controls, locations where stabilization practices are expected to occur, locations of material, waste, borrow and equipment storage areas, surface waters, and locations of storm water discharges to surface water;
 - c. Name of waterway(s) that will receive discharges from disturbed areas of the project;
 - d. A detailed project description.

2. A description of controls that will be used at the site to reduce pollutants:
 - a. Erosion and sediment controls, including short and long term goals and criteria, stabilization practices, and structural practices in accordance with North Central Texas Council of Governments – Best Management Practices Manual.
3. Controls for associated activities such as off-site vehicle tracking of sediments, on-site material storage, spill prevention and response, and asphalt and concrete plants.
4. Maintenance Procedures: Demonstrate how all erosion and sedimentation control measures identified in the ECP will be maintained in effective operating condition.
5. Inspection Procedures:
 - a. Provide that specified areas of the site are inspected by qualified Contractor-personnel a minimum of once every 14 calendar days and within 24 hours after any storm event of greater than 0.5 inches or once every seven days same day each week.
 - b. Inspection reports are to be provided to CM within 48 hours of inspection. At closeout, copies of all inspection reports are to be submitted to the EAD office as part of project closeout documentation.
 - c. Inspection reports must summarize the scope of the inspection, name(s) and qualifications of personnel conducting the inspection, the date of the inspection, major observations relating to the implementation of the ECP, and actions taken.
6. Pollution prevention measures for any non-storm water discharges shall be documented in the ECP. Non-storm water discharges from active construction sites which are authorized by the permit include the following:
 - a. Uncontaminated fire hydrant flushing (excluding discharges of hyper chlorinated water);
 - b. Water used to wash vehicles where detergents are not used;
 - c. Uncontaminated water (no additives) used to control dust;
 - d. Potable water sources including waterline flushings (excluding discharges of hyper chlorinated water);
 - e. Routine external building wash-downs where detergents or additives are not used;
 - f. Pavement wash-water where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents or additives are not used;
 - g. Uncontaminated air conditioning condensate;
 - h. Uncontaminated ground water or spring water;
 - i. Foundation or footing drains where flows are not contaminated with process materials such as solvents.
 - j. Discharge of hyper chlorinated water is not allowed unless the water is first de-chlorinated and discharges are not expected to adversely affect aquatic life.
7. The ECP must remain at the job site and be available upon request.

8. Contractor's Certification: Include as a minimum:

- a. The following certification statement, signed by the Contractor's representative: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility for fine and imprisonment for knowing violations."
- b. The name and title of the person providing the signature;
- c. The name, address and telephone number of the contracting firm;
- d. The address (or other identifying description) of the site;
- e. Contract number and Construction Application Permit number of the project;
- f. Date the certification is made.

B. Storm Water Pollution Prevention Plan (SWPPP): A guide on the development and implementation of a SWPPP may be downloaded from the following sources: Environmental Protection Agency (EPA) website <http://www.epa.gov/earth1r6/6en/w/sw/constsum.pdf> , the Texas Commission on Environmental Quality (TCEQ) web site www.tceq.state.tx.us/nav/permits/wq_construction.html , or may be obtained from the Airport Board EAD office. The Contractor shall refer to TCEQ Construction Stormwater General Permit TXR150000 for all specific requirements. Include, as a minimum:

1. A complete description of the site, including:

- a. Site-specific information including the site name, location, owner's name and information, operator's name and information, contractor's name and information, any subcontractor's name and information, and the local Municipal Separate Storm Sewer System (MS4) operators name and information;
- b. A detailed description of the construction activity and intended sequence of major activities that will disturb soils;
- c. Total number of acres of the entire project including where construction activities will occur, off site material storage areas, dirt stockpiles, borrow areas, temporary asphalt or concrete plants that are to be authorized under the permit as well as estimated number of acres from the total where soil and vegetation will be disturbed including disturbance due to access routes to these areas;
- d. A description of site soil characteristics, topography and the quality of any current discharge from the site;

- e. A list of potential pollutants and their sources including construction and waste materials that will be stored on site or in associated yard areas or any vehicle or equipment wash areas or maintenance;
 - f. A general location map;
 - g. A site map indicating drainage patterns and approximate slopes after major grading activities; areas of soil disturbance, areas which will not be disturbed, locations of structural and nonstructural controls, locations where stabilization practices are expected to occur, locations of material, waste, borrow and equipment storage areas, surface waters, and locations of storm water discharges to surface water, and locations of any vehicle or equipment wash areas, maintenance of refueling areas;
 - h. Location and description of other discharges associated with industrial activity other than construction (storm water discharges from dedicated asphalt or concrete plants);
 - i. Name of waterway(s) that will receive discharges from disturbed areas of the project.
2. A description of controls that will be used at the site to reduce pollutants:
- a. Erosion and sediment controls including short and long term goals and criteria, including preservation of existing vegetation where it is possible as well and stabilization and structural practices;
 - b. Controls for associated activities such as off-site vehicle tracking of sediments, on-site material storage, spill prevention and response, and asphalt and concrete plants;
3. Inspection Procedures:
- a. Provide that specified areas of the site are inspected by a designated and qualified inspector a minimum of once every 14 calendar days and within 24 hours after any storm event of greater than 0.5 inches or every seven days on the exact day every week.
 - b. Inspection reports must summarize the scope of the inspection, name(s) and qualifications of personnel conducting the inspection, the date of the inspection, major observations relating to the implementation of the SWPPP, and actions taken. Inspections shall be filed with the CM within 48 hours of completion. At closeout, copies of all inspection reports are to be submitted to the EAD office as part of project closeout documentation.
4. Description of pollution prevention measures for any non-storm water discharges that exist shall be documented in the SWPPP. Non-storm water discharges from active construction sites which are authorized by the General Permit include the following:
- a. Uncontaminated fire hydrant flushing (excluding discharges of hyper chlorinated water);
 - b. Water used to wash vehicles where detergents or additives are not used;

- c. *Uncontaminated water used to control dust (no additives);*
 - d. Potable water sources including waterline flushing (excluding discharges of hyper chlorinated water;
 - e. Routine external building wash-downs where detergents or additives are not used;
 - f. Pavement wash-water where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents or additives are not used;
 - g. Uncontaminated air conditioning condensate;
 - h. Uncontaminated ground water or spring water;
 - i. Foundation or footing drains where flows are not contaminated with process materials such as solvents.
 - j. Discharge of hyper chlorinated water is not allowed unless the water is first de-chlorinated and discharges are not expected to adversely affect aquatic life.
5. The SWPPP must be implemented and amended in accordance with the requirements of the TPDES Construction General Permits.
6. The SWPPP must remain at the job site and be available upon request.
7. Contractor's Certification: general contractor and all subcontractors that implement measures in the SWPPP. The general contractor, as an operator of the SWPPP, shall have a representative sign meets the qualifications for Signatories for Applications according to 30 TAC 305.44 as listed in the general permit and shall certify using the following statement: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
- The subcontractors shall be listed in the SWPPP and shall have a responsible representative sign a simple acknowledgement certifying they are aware of the SWPPP regulations and shall abide by them for this project.
8. An Authorized Signatory letter signed in accordance with 30 TAC 305, Subchapter C. This letter is to delegate authority for an individual to perform and sign inspection reports. The letter must be printed on company letterhead. EAD will mail the letter to the executive director for the TCEQ upon SWPPP approval.
9. Inspector Qualifications for each designated inspector.

1.7 ENVIRONMENTAL PERMITTING

A. Apply for and meet the requirements and provisions of the TPDES Construction General Permit (CGP), Permit No. TXR150000, under the permitting authority of the TCEQ. A copy of the General Permit and other information can be found at the TCEQ website
http://www.tceq.state.tx.us/nav/permits/wq_construction.html

B. For projects that will disturb five or more acres:

1. Obtain a copy of the TCEQ CGP (TPDES Permit No. TXR150000).
2. Develop and implement a SWPPP.
3. Prepare and submit a NOI (with check for payment), a CSN and the SWPPP, to EAD for review and approval with a copy being filed with the CM. After review and approval, EAD will then mail the NOI and check to TCEQ or approve the Contractor to complete the electronic filing through the TCEQ website.
4. Contractor is responsible to perform all implement the SWPPP in its entirety including but not limited to the required inspections, BMP installation and maintenance, updating and amendment of the SWPPP documentation as the project proceeds. The Contractor is to advise the Airport Board project management when the plans or funds are insufficient to meet or maintain the standards of the General Permit.
5. Contractor is to request a final stabilization inspection to determine if final stabilization meeting the General Permit definition has been accomplished.
6. If final stabilization is met per EAD, the Contractor is to prepare and submit as part of closeout documents a NOT and copies of Maintenance Logs, Inspection Reports and Amendments made to the SWPPP during the course of the as a "Final Copy of the SWPPP" to EAD. EAD will mail the NOT to the TCEQ or will approve the Contractor to complete an electronic submission through the TCEQ website.

C. For projects that will disturb one or more acres, but less than five acres, including the larger common plan of development:

1. Obtain a copy of the TCEQ CGP (TPDES Permit No. TXR 150000).
2. Develop and implement a SWPPP.
3. Prepare and submit a CSN and the SWPPP, to EAD for review and approval with a copy being filed with the CM.
4. Contractor is responsible to perform all implement the SWPPP in its entirety including but not limited to the required inspections, BMP installation and maintenance, updating and amendment of the SWPPP documentation as the project proceeds. The Contractor is to advise the Airport Board project management when the plans or funds are insufficient to meet or maintain the standards of the General Permit.
5. Contractor is to request a final stabilization inspection from EAD to determine if final stabilization meeting the General Permit definition has been accomplished.

6. If final stabilization is met per EAD, the Contractor is to submit as part of closeout documents copies of Maintenance Logs, Inspection Reports and Amendments made to the SWPPP during the course of the as a "Final Copy of the SWPPP" to EAD.

D. For projects that will disturb less than one acre and are not part of a larger common plan of development, coverage under this permit is not required. Per EAD requirements, an ECP shall be developed, submitted, and implemented. If the construction activity develops into a larger project, then permit coverage may be required at that time based on the total number of acres that will be disturbed.

E. Comply with DFW Airport Board Policy Number SWCS-001 Storm Water Pollution Prevention - Construction. The Storm Water Construction Program is designed to provide guidance and assistance for tenants, contractors, and Airport Board Personnel to ensure compliance with the EPA and TCEQ Construction General Permit.

F. Development and submittal of an ECP or SWPPP is part of the permit construction application approval process.

1.8 CLOSE OUT

A. For closeout, the contractor will contact EAD for an appointment to conduct the final stabilization inspection. EAD will meet with the contractor to do a final inspection and determine if the final stabilization meets DFW requirements.

B. If final stabilization is met per EAD, the Contractor is to prepare and submit as part of closeout documents a NOT (if an NOI was originally required) If an NOT is required, EAD will mail the NOT to the TCEQ or will approve the Contractor to complete an electronic submission through the TCEQ website. Under no circumstances shall the Contractor submit their NOT to TCEQ without prior approval of EAD.

C. Submit final copies of the ECP and SWPPP to EAD showing all amendments and revisions, including but not limited to inspection reports, maintenance logs, employee training logs, required discharge sample results or any other record keeping log required by the General Permit.

1.9 SEQUENCING AND SCHEDULING

A. No clearing, grading or excavation activity can proceed until the NOI and/or CSN is posted at the job site, the ECP or SWPPP is on the job site, and the storm water management controls have been installed and inspected for correct installation practices.

B. Establish erosion and sediment control measures prior to beginning construction

and maintain throughout the entire project duration adjusting as needed to maintain soils on the construction site. The Contractor is responsible for retrieving or removing sediments that escape the construction site.

C. Initiate stabilization measures as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but no later than 14 days after construction activities have temporarily or permanently ceased.

D. Sequencing and scheduling should also consider division of larger sites into distinct portions that may be treated separately for purposes of leaving existing vegetative cover intact in on portion while disturbance proceeds in another portion. The beginning of stabilization practices should be considered separately for each distinct portion of the site independent of activities in other portions. An example of a distinct portion could be a detention basin or drainage swales that once constructed may start stabilization independent of ongoing activities in other areas of a site.

PART 2 PRODUCTS

2.1 MATERIALS

A. DFW will NOT accept Hay Bales/Waddles as an erosion and sediment control BMP.

B. All Erosion and Sediment Control materials shall be in accordance with North Central Texas Council of Governments – Best Management Practices Manual, with the exception of hay bales. Other published material guidelines may be accepted upon submittal for review and approval to EAD.

PART 3 - EXECUTION

3.1 GENERAL

A. Comply with all applicable requirements of all governing authorities having jurisdiction. These Contract Documents are not represented as being comprehensive, but rather to convey the intent to provide complete slope protection and erosion control for both the project site and the adjacent property.

B. Plan and conduct all land disturbing activities to minimize the size of the area to be exposed at any time and to minimize the time of exposure.

C. Plan and conduct all land-disturbing activities so as to minimize off-site sedimentation damage.

D. Construct or install temporary and permanent erosion and sediment control measures as indicated on the plans, or as directed by the CM.

E. On-site areas, which are subject to severe erosion, and off-site areas, which are especially vulnerable to damage from erosion and sedimentation, are to be identified and receive additional erosion control measures as directed by the CM.

- F. Control surface water run-off originating upgrade of exposed areas to reduce erosion and sediment loss during the period of exposure.
- G. When the increase in the peak rates and velocity of storm water run-off resulting from a land-disturbing activity is sufficient to cause accelerated erosion of the receiving ditch or stream, install measures to control both the velocity and rate of release so as to minimize accelerated erosion and increased sedimentation of the stream as directed by the CM.
- H. No run-off from any excavated material shall be allowed to discharge into any drainage facility.
- I. The erosion and sediment controls selected shall be such that water quality standards are not violated as a result of the construction activities.
- J. Dust Control:
 - 1. Maintain dust control in all areas impacted by construction, or as directed by the CM, via water application.
 - 2. Do not apply water to the point that causes flooding or pollution.

3.2 BEST MANAGEMENT PRACTICES (BMPs)

- A. All erosion control BMPs shall be conducted in accordance with the integrated Storm Water Management Design Manual for Construction produced by the North Central Texas Council of Governments dated December 2003. An alternative published BMP design manual may be submitted for review and approval to EAD.
- B. All slopes of 3 to 1 or greater shall use some form of surface covering such as hay mulch or matting for temporary stabilization when a project temporarily or permanently ceases construction activity.

3.3 STRUCTURAL EROSION CONTROLS

- A. All structural erosion controls shall be designed and installed in accordance with the integrated Storm Water Management Design Manual for Construction produced by the North Central Texas Council of Governments dated December 2003. An alternative published design manual may be submitted for review and approval to EAD.
- B. All slopes of 3 to 1 or greater shall use some form of surface covering such as hay mulch or matting for temporary stabilization when a project temporarily or permanently ceases construction activity.

3.4 MAINTENANCE

- A. General:
 - 1. Maintain all erosion and sedimentation control measures identified in the ECP and SWPPP in effective operating condition.

2. The Airport Board EAD office or the CM will determine adequacy of Contractor's maintenance of the erosion control measures at the project site. If Contractor fails to maintain the erosion control measures to the satisfaction of EAD and CM, the CM may separately contract a crew to perform the necessary maintenance and the cost will be deducted from Contractor's contract.
3. Clean and dispose of all sediment once the storage capacity of the drainage feature or structure receiving the sediment is reduced by one-third.
4. Clean and dispose of all sediment and remove all erosion control products at the time of completion of the work. Biodegradable erosion products may be left in place or mulched at the site if approved by the CM.

B. Paved Surfaces:

1. Immediately remove all sediment spilled, dropped, washed or tracked onto any paved surface.
2. All trucks hauling an erodable material such as soil, gravel, small rock or sand shall use a functioning tarp covering the bed of the truck while on the public roads of the airport.
3. When necessary, clean construction equipment to remove sediment prior to entrance onto any paved surface.
4. When required, equipment washing shall be done on an area stabilized with crushed stone designed to drain into an approved sediment trap or basin.

C. Construction Entrance:

1. The construction entrance shall be an all weather surface.
2. Maintain entrance in a condition which will prevent tracking or flowing of sediment onto any paved surface, including top dressing with additional stone as conditions demand and repair or clean-out of any measures used to trap sediment.

D. Dike or Silt Check System:

1. Remove accumulated sediment and debris from the surface.

3.5 CLOSURE

- A. Contractor must request a final stabilization inspection from EAD before being approved for closure. All BMP's must be removed prior to closure.**

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. This specification provides the minimum procedures to prevent, prepare for, notify, and respond to any spills during construction projects that involve fuels, oils, paints, chemicals, regulated substances, or other hazardous materials.

1.2 RELATED SECTIONS

- A. Section 01 57 19.13 Spill Response.
- B. Section 01 57 19.14 Spill Response Plan.
- C. Section 01 57 19.23 Construction Site Spill Prevention Control and Countermeasures (SPCC)
- D. Section 01 74 19 Construction Waste Management and Disposal.
- E. Section 01 74 19.13 Waste Characterization.

1.3 REFERENCES

- A. The following is a list of standards which may be referenced in this Section:
 - 1. United States Environmental Protection Agency (USEPA), U.S. Code (USC), Title 42, Chapter 103, Comprehensive Environmental Response, Compensation, and Liability (CERCLA).
 - 2. United States Environmental Protection Agency (USEPA), U.S. Code of Federal Regulations (CFR), Title 40 Part 302, Designations, Reportable Quantities, and Notifications.
 - 3. Texas Administrative Code (TAC): 30, Chapter 327, Spill Prevention and Control.

1.4 DEFINITIONS

- A. CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act.
- B. CFR: Code of Federal Regulations.
- C. CM: Construction Manger.
- D. DFW CM: DFW Airport Construction Manager.
- E. DPS: DFW Department Of Public Safety
- F. EAD: DFW Airport Environmental Affairs Department.
- G. EPCRA: Emergency Planning and Community Right-to-Know Act.
- H. Oil or Oil Products: Oil in any kind or in any form, including but not limited to: fats, oils; greases of animal, fish or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits or kernels; and other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil.
- I. Oil Spills: Quantities that may be harmful to public health. These include the following types of discharges:
 - 1. Violate applicable water quality standards.

- 2. Cause film or "sheen" upon, or discoloration of the surface of the water or adjoining shorelines.
- 3. Cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.
- J. SPCC: Spill Prevention Control and Countermeasure.
- K. Spill: Any release or discharge from designated/designed containers. Includes, but is not limited to, spilling, leaking, pumping, pouring, emitting, emptying, or dumping of fuels, oils, hazardous materials, air pollutants and/or hazardous waste unless the emission is covered by an applicable permit.
- L. SRP: Spill Response Plan
- M. TAC: Texas Administrative Code
- N. TCEQ: Texas Commission on Environmental Quality.
- O. USEPA: United States Environmental Protection Agency

1.5 SUBMITTALS

- A. Submit Spill Response Plan to CM at least 15 days prior to beginning the Work and prior to having regulated materials onsite.

1.6 SPILL RESPONSE PLAN (SRP)

- A. A SRP is required for projects that will use or store fuels, oils, paints, chemicals, and any other material in quantities that may pose a threat to human health or the environment. The SRP provides special procedures for fueling operations.
- B. Coordinate preparation of SRP with spill/cleanup company.
- C. Prepare by completing all requested information shown on the attached Spill Response Plan template.
- D. Update SRP on a regular basis. At a minimum, review SRP weekly and update when the following occur:
 - 1. Applicable regulations are revised.
 - 2. Plan fails in an emergency.
 - 3. Site changes in design, construction, operation, maintenance or other circumstances that materially increase potential for fires, explosions, release of hazardous waste or hazardous waste constituents, or changes response necessary in an emergency.
 - 4. Change in list of emergency coordinators.
 - 5. Change in list of emergency equipment.
- E. Contents
 - 1. Opening statement providing spill reporting points of contact and DFW Airport specific spill reporting requirements.
 - 2. General Information including project name and description, Contractor Emergency Coordinator information and description of materials that will be used and stored on the construction site.

3. Prevention measures that have been taken by the Contractor for the project.
4. Preparedness measures implemented by the Contractor for the project location.
5. Important reporting and contract numbers.
6. Planned response actions.
7. Procedures the Contractor plans to use to stabilize the site following a spill including the cleanup of the spilled materials and the handling and disposal of the materials used to clean up the spill.

PART 2 – PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 SPILL EVENTS

- A. Report all spills immediately by phone to DFW International Airport Operations Center (AOC) at 972-973-3112.
- B. Implement SRP activities immediately upon a spill event, including proper notifications to the appropriate parties.
- C. Provide a written follow-up report to EAD within 48-hours of the spill.
- D. When the spilled quantity exceeds the reportable quantity of that material, provide a verbal report to Texas Commission on Environmental Quality (TCEQ) within 24 hours, or as soon as possible, of event, to include at a minimum the following information:
 1. Direction of discharge.
 2. Rate of flow.
 3. Total quantity of discharge from facility.
 4. Description of corrective action taken.
 5. Plans for preventing recurrence.
 6. Impacted waters/receptors.

- D. Notification to the National Response Center (NRC) notification may also be required.

In the event spill requires to be cleaned and removed from site:

1. Follow the procedures for disposal in SRP and Section 01 74 19, Waste Management and Section 01 74 19.13, Waste Characterization.
2. Provide written report within 30 days of the spill to TCEQ and EAD.
- E. All Contractor caused spills shall be cleaned by the Contractor at Contractor's expense.

3.2 POST-SPILL ACTIVITIES

- A. EAD will determine adequacy of Contractor's cleanup activities. If Contractor fails to cleanup spill to the satisfaction of EAD, CM will separately contract a response crew to clean up the spill and cost will be deducted from Contractor's contract.
- B. Follow reporting requirements of EPCRA 302 and CERCLA 103 as applicable.
- C. When the spill exceeds the reportable quantity, notify the TCEQ. If the spill enters the waters of the State or U.S., notify the National Response Center (NRC). Notify the regional TCEQ office during normal business hours (8 AM to 5 PM, Monday through Friday) or the TCEQ 24-hour spill reporting number. At a minimum, the following information shall be included in the report:
 - 1. Name, address, and telephone number of party in charge of, or responsible for, the facility, vessel, or activity associated with the release or spill.
 - 2. Date, time, and duration of spill or release.
 - 3. A specific description or identification of the oil, petroleum product, hazardous substances or other substances discharged or spilled.
 - 4. Estimated quantity of material released or spilled.
 - 5. Location of spill, including name of the waters involved or threatened, and other medium or media affected by release or spill.
 - 6. Source of release or spill.
 - 7. Extent of actual and potential water pollution including the following:
 - a. Quantity released and quantity recovered.
 - b. Identify water body.
 - c. Estimated mixing/flow, i.e., how far has it flowed down the creek.
 - d. Location where spill was stopped.
 - e. Sampling results if samples taken.
 - f. Visual effects such as sheen, discoloration, dead fish.
 - 8. Steps being taken or proposed to contain and clean up the released or spilled material and any precautions taken to minimize impacts including evacuation.
 - 9. Extent of injuries, if any.
 - 10. Known or anticipated health risks associated with the incident and, where appropriate, advice regarding medical attention necessary for exposed individuals.
 - 11. Possible hazards to environment (air, soil, water, wildlife, etc.). This assessment may include references to accepted chemical databases, material safety data sheets, and health advisories. Estimated or

measured concentrations of containment may be requested by TCEQ for state's hazard assessment.

12. Identity of governmental and private sector representatives responding on-scene.

3.3 SUPPLEMENTS

- A. The supplement(s) listed below, following "End of Section," are a part of this Specification:

1. Spill Response Plan template.

– END OF SECTION –

Spill Response Plan Template(SRP)

Project Name: _____

Permit Number: _____

General Contractors Name: _____

Site Superintendent's Name and phone number:

Below is the general procedure to follow in the event of a spill or loss of product that results in an impact or potential impact to soil, surface water, groundwater or sanitary sewer system.

Notifications:

- 911 (if immediate danger to life or health)
- DFW Airport Operations Center (AOC) at (972) 973-3112 for all spills no matter what the quantity.
- General Contractor Site Superintendent.
- Environmental Emergency Response Contractor (if necessary).
- For spills that exceed the reportable quantity established per federal and state regulations, also contact the Texas Commission on Environmental Quality (TCEQ) at 800-832-8224 and the National Response Center at 800-424-8802.
- DFW Board project or construction manager or tenant coordinator.

Cleanup:

- Impacted soil or used absorbent material shall be picked up and stored in a waterproof, leak proof manner such as on plastic sheeting and covered with plastic sheeting, a drum or roll-off container with a lid or cover that can be secured, or a 5-gallon bucket with a secure lid.
- The Site Superintendent or Emergency Response Coordinator will work with DFW Airport Environmental Affairs Department (EAD) to determine the appropriate sampling and disposal protocols for handling impacted soils, absorbent materials, or water.
- Coordinate all activities involving sampling and disposal of impacted media with EAD. Provide proof of sampling and disposal such as laboratory analytical reports and waste manifests.

Follow-up:

- Within 48 hours send a written report to EAD describing the cause of the release, the total quantity of material discharged, description of corrective action taken or still in progress to be completed, notifications made, and plans for preventing recurrence.
- Complete any follow-up reports required by the TCEQ or National Response Center within the allowable time frames. Provide copies of all reports to EAD.
- Submit a copy of documentation of disposal to EAD, i.e. US EPA uniform hazardous waste manifest generator's initial copy or trucking trip ticket(s) with disposal receipt to EAD at the

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time of disposal. Also submit a copy of the final uniform hazardous waste manifest "designated facility to generator copy" by the time of environmental closeout.

Project Description:

List of Spillable Materials on site: (this includes fluids from heavy equipment, applied materials such as paint, stored chemicals, adhesives, granular materials, admixes...)

Material (i.e. diesel fuel, paint, hydraulic fluid)	Estimated quantity	Storage location (Where is it kept? i.e. excavator, drum, 5-gallon bucket)

Fueling:

Will fueling or vehicles or equipment be done on site? _____

If yes, please explain method, location, preventative measures that will be taken to prevent spills or overfills, and cleanup procedures in the event of a spill or overfill.

Prevention:

The contractor will employ the following policies and procedures during construction activities to prevent the occurrence of spills at the job site:

- Properly train on-site employees of spill awareness and prevention
- Transfer liquids between containers only over paved areas and away from any storm drains, creeks, channels or other surface water bodies.
- Provide details on spill prevention specifically related to refueling activities

Preparedness:

The contractor will provide the following spill response equipment and supplies to be maintained on site for use in the event of a spill:

Prepared by:

Printed Name

Signature

Company

Date

Spill Response Plan << Project Name >>
 << Permit Number >>
 << Date>>

In the event of a spill or loss of product that results in the impact or potential impact to soil, surface water or groundwater, immediate verbal notification should be made to DFW Operations Center at (972) 973-3112. A written report should follow within 48 hours. Information submitted should include direction, rate of flow, total quantity of material discharged, description of corrective action taken and plans for preventing recurrence.

General Information

- << add project name >>
- Project Description: << add brief project scope >>
- Emergency coordinator names and phone numbers: << add name and telephone number >>
- Description of what is stored and used at the site
 - Fuel and liquids in construction equipment; << add quantities of liquids in construction equipment>>
 - << add other liquids and chemicals to be used and stored on site, include quantities of liquids that will be on site>>
 - Mobile Fuel Source for Periodic Fueling of equipment. << if used, if no on site fueling will be employed, remove bullet item >>
 - Fuel Trucks with << ?? Gallon Tanks >>

Prevention

The contractor will perform the prevention measures taken at the facility (what has been done ahead of time to prevent a spill from happening)

- Properly train on-site employees of spill awareness and prevention
- Keep all liquids off site until needed.
- Transfer liquids between containers only over paved areas and away from any drains.
- All fueling will occur with an appropriately trained operator present and spill response materials immediately available. << If on site fueling is planned>>
- All fueling will be conducted away from storm drains, creeks, channels or other surface water bodies. << If on site fueling is planned>>

Preparedness

- The contractor will provide at a minimum the following equipment, material and supplies that will be on site for spill response:
 - Adsorbent materials/rags
 - drip pans or buckets
 - plastic
 - shovels
 - brooms
 - other hand tools and equipment.
- If the response/cleanup will provided by a sub-contractor, provide the name and phone number of response contractor.
- For fueling operations, the fuel truck operator will have a spill kit immediately available onsite. In case of a large spill, the general contractor (or his designate) will contain the spill until the qualified cleanup contractor can respond to the site. << If on site fueling is planned>>

Important phone numbers to call in case of a spill:

- 911 (when any public safety threat is possible)

- Site Superintendent: << add name and telephone number >>
- DFW Environmental Affairs Department 972-973-5560
- DFW AIRPORT OPERATIONS Center 972-973-3112
- Texas Commission on Environmental Quality (TCEQ) 800-832-8224
- National Response Center 800-424-8802

Response Action (CALL 911 FIRST IF PUBLIC SAFETY IS THREATENED)

- The site Superintendent will lead all response actions.
- Define the problem
- Quickly analyze and assess the situation: Where will the spill go? What problems might result?
- Site control - keep people away and upwind.
- Stop the source if you can do it safely.
- Eliminate sources of ignition.
- Attempt to contain the spilled material if you can do it safely.
 - Place drip pan or bucket under leak valve.
 - Use absorbent material on small spill (kitty litter, pads, sand).
 - Block or dike any nearby drains or pathways to surface waters.
- Call the appropriate people to get help.

Stabilization

- The site Superintendent will ensure that the party responsible for the spill takes the necessary action to clean up the spill or the general contractor will take the necessary actions to clean up the spill. Use on-site equipment if spill is small and manageable. Call a qualified cleanup contractor (provide name and telephone number) if it is beyond capabilities on on-site equipment and staff.
- If a material spill occurs on pavement or other impervious surface, absorb spilled material with rags or other inert material. Place rags and absorbent material on plastic sheeting or in a clean drum.
- Place any impacted soil on an adequately sized sheet of plastic or in a clean drum.
- Cover impacted soil or absorbent material stored on plastic with plastic. Cover and seal drums that contain impacted soil or absorbent materials.
- The Site Superintendent or alternative project representative will work with representatives of DFW Airport Environmental Affairs Department to determine the appropriate sampling and disposal for the impacted soil or absorbent material.
- Review prevention, preparedness and response activities to determine if spill could have been avoided.

– END OF SECTION –

PART 1 – GENERAL

1.1 SUMMARY

- A. This specification describes procedures and practices to minimize or eliminate discharge of concrete slurry waste materials to storm drain systems or watercourses.
- B. The Contractor will oversee and enforce concrete waste management procedures, in cooperation with the Owner's Authorized Representative (OAR) and the DFW Airport Environmental Affairs Department (EAD).

1.2 RELATED REQUIREMENTS

- A. Section 01 74 19, Construction Waste Management and Disposal
- B. Section 01 57 23 Storm Water Pollution Prevention

1.3 DEFINITIONS

- A. OAR: Owner's Authorized Representative.
- B. PCC: Portland cement concrete.
- C. AC: Asphalt concrete.

1.4 SUBMITTALS

- A. Concrete slurry wastes shall be listed and the handling and disposal plans clearly detailed in the project Waste Management Plan.

1.5 CONCRETE SLURRY WASTE MANAGEMENT APPLICABILITY

- A. Educate employees, subcontractors, and suppliers on concrete waste management techniques described in this Section.
- B. Implement concrete slurry waste management procedures and practices on construction projects where:
 - 1. Concrete dust and debris are wetted as a result of demolition activities. For dry dust and debris, refer to Section 02 41 19, Selective Demolition.
 - 2. Slurries containing PCC or AC are generated, such as from saw cutting, coring, grinding, grooving, and hydro-concrete demolition.
- C. Do not mix PCC and AC slurry if materials are to be recycled.
- D. If recycling PCC and AC slurry, do so only at an approved facility.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 CONCRETE SLURRY WASTES

- A. Place PCC and AC slurry waste in a slurry waste container.
- B. Dispose of hardened PCC and AC waste in conformance with Section 01 74 19, Construction Waste Management and Disposal.
- C. Install sign adjacent to each temporary concrete washout facility. Install as shown on Drawings or as directed by the OAR. The sign shall say "Concrete Slurry Waste Only", or equivalent in English and Spanish.
- D. Monitor onsite concrete working tasks, such as saw cutting, coring, grinding, and grooving to ensure proper methods are implemented.
- E. Do not allow saw cut PCC slurry to enter storm drains or watercourses.
- F. Do not allow saw cutting residue to flow across the pavement or leave on the pavement surface. Pick up residue from saw cutting operations by means of a vacuum system in conjunction with the cutting device. Remove any slurry residue until no further residue may be loosened by abrasion (scraping or bristle broom) and only a stain remains
- G. Vacuum slurry residue and dispose of in a slurry waste container and allow slurry to dry. Dispose of dry slurry residue in accordance with Section 01 74 19, Construction Waste Management and Disposal.
- H. Collect and dispose of residue from grooving and grinding operations in accordance with Section 01 74 19, Construction Waste Management and Disposal, and as directed by the OAR.
- I. Do not place slurries into a Board supplied concrete truck washout container. Should this occur, the contractor will be responsible for extra expenses incurred from extra time required in order for slurries to harden appropriately for transport or for clean out and disposal of the slurries from the Board supplied washout box.

3.2 MAINTENANCE AND INSPECTION

- A. Monitor on-site concrete slurry waste storage and disposal procedures weekly or as directed by the OAR.
- B. Monitor concrete working tasks, such as saw cutting, coring, grinding, and grooving, daily to ensure proper methods are employed.
- C. Maintain concrete slurry waste containers to provide adequate holding capacity with a minimum freeboard of 300 mm (12 inches), and protect from storm water runoff.
- D. Remove and dispose of hardened concrete slurry waste to maintain functional condition May either clean existing container or construct new container once washout is 75 percent full of solids.
- E. Remove any concrete slurry waste residue from the surrounding ground surface that occurs.
- F. Repair damaged concrete slurry waste containers immediately.

3.3 REMOVAL OF CONCRETE SLURRY WASTE CONTAINERS

- A. Dispose of PCC slurries or liquid waste in conformance with provisions of Section 01 74 19, Construction Waste Management and Disposal, or recycle at an approved facility.
- B. Remove materials used to construct concrete slurry waste container from the site of the work, and dispose of in conformance with the provisions of Section 01 74 19, Construction Waste Management and Disposal.
- C. Backfill holes, depressions, or other ground disturbance caused by the removal of the concrete slurry waste container to original elevations. Repair associated damages as directed by the OAR.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. This specification outlines the appropriate documentation required for handling and use of all refrigerants (e.g. chlorofluorocarbons and hydrochlorofluorocarbons) during the installation, maintenance, repair or removal of HVAC equipment.

1.2 REFERENCES

- A. The following is a list of standards which may be referenced in this Section:
1. Air-conditioning and Refrigeration Institute (ARI): 740, Refrigerant Recycling/Recovery Equipment.
 2. United States Environmental Protection Agency (USEPA):
 - a. U.S. Code of Federal Regulations (CFR): Title 40 Part 82, Protection of the Stratospheric Ozone, Subpart F.
 - b. Clean Air Act (CAA), Section 608 and 609.

1.3 DEFINITIONS

- A. Chlorofluorocarbon (CFC): a compound consisting of chlorine, fluorine, and carbon; Includes, but is not limited to the following chemicals:
1. Trichlorofluoromethane (CFC-11).
 2. Dichlorodifluoromethane (CFC-12).
 3. 1, 1, 2-Trichlorotrifluoroethane (CFC-113).
 4. Dichlorotetrafluoroethane (CFC-114).
 5. Monochloropentafluoroethane (CFC-115).
- B. EAD: DFW Environmental Affairs Department.
- C. EUST: Energy and Utility Service Technician.
- D. Hydrochlorofluorocarbon (HCFC): compound consisting of hydrogen, chlorine, fluorine, and carbon.
- E. Hydrofluorocarbon (HFC): compound consisting of hydrogen, fluorine, and carbon.
- F. HVAC: Heating, Ventilation, and Air Conditioning.
- G. OAR: Owner's Authorized Representative.
- H. USEPA: United States Environmental Protection Agency.

1.4 SUBMITTALS

- A. Contractor employee USEPA-approved training certificates.
- B. Repairs or services of any motor vehicle air conditioners, training records and proper certification shall be available and submitted to OAR.
- C. Certifications for air-conditioning and refrigeration appliance equipment.
- D. Certifications for recycling and recovery equipment.

- E. Completed copies of USEPA Refrigerant Recovery or Recycling Device Acquisition Certification Form; submit to OAR.
- F. Documentation demonstrating proper disposal of demolished or removed refrigerant appliances; submit to OAR.

1.5 QUALITY ASSURANCE

- A. If Contractor repairs or services any motor vehicle air conditioners, personnel performing such Work shall be trained and certified by an USEPA-approved organization (USEPA Clean Air Act, 40 CFR Subpart 82).
- B. Motorized Vehicle Air Conditioning Certification Requirements: If repairs or servicing is performed by a service shop, such service shop shall certify to USEPA it has acquired and is properly using approved refrigerant recovery equipment, and that each person using the equipment has been properly trained and certified. Certification statement shall include the name and address of the service establishment, the name of the equipment manufacturer, equipment model and serial number, and equipment date of manufacture (certified in accordance with 40 CFR 82.36(a)).
- C. Energy and Utility Service Technician (EUST):
 - 1. Contractor shall utilize only trained, USEPA-certified employees to perform maintenance, service, repair, or disposal that could be reasonably expected to release refrigerants into the atmosphere.
 - 2. Contractor shall appoint qualified personnel to act as the energy and utility service technician, and to perform weekly refrigerant leak checks.
 - 3. The EUST shall have knowledge of the following refrigerant modes:
 - a. One Ton Cylinder to Storage Tank.
 - b. One Ton Cylinder to Chiller Evaporator.
 - c. Storage Tank to Chiller Evaporator.
 - d. Storage Tank to Chiller (Vapor).
 - e. Chiller Vessel to Storage Tank (Vapor).
 - f. Chiller Vessel to Storage Tank (Liquid).
 - g. Storage Tank to Storage Tank (Liquid).
 - h. Potential for leaks, or releases from these sources, and the procedures to follow in case of leaks, or releases.
 - i. Knowledge of, and maintenance of required records and reports of leaks or releases including releases from chiller pressure relief valves.
 - 4. The EUST shall exhibit the ability to calculate the amount of refrigerant in the chiller module as follows:
 - a. Knowledge/use of procedures for all equipment with greater than 50-pound charge.
 - b. Knowledge/use of procedures for maintaining leak rate calculations/records in accordance with 40 CFR 82.156(i)(1).

- c. Obtain and maintain Level 2, High Pressure Refrigerant Certification as defined by the USEPA Section 608.
- d. Obtain and maintain Level 3, Low Press Pressure Refrigerant Certification as defined by the USEPA Section 608.

1.6 EQUIPMENT CERTIFICATION

- A. Test refrigerant recovery and recycling equipment using a USEPA-approved testing organization.
- B. Test equipment intended for use with air-conditioning and refrigeration appliances under USEPA requirements based upon the ARI 740 test protocol (i.e., USEPA Appendices B and B1 to 40 CFR 82 subpart F).
- C. Test recycling and recovery equipment intended for use with small appliances under USEPA Appendix C to 40 CFR 82 subpart F or alternatively under requirements based upon the ARI 740 test protocol (i.e., Appendices B and B1 to 40 CFR 82 subpart F).

1.7 REPORTING REQUIREMENTS

- A. Servicing appliances containing 50 pounds or more of refrigerant:
 - 1. Provide OAR a report that indicates the amount of refrigerant added to the appliance including an annual percent leak rate calculation.
 - 2. Maintain a record of the type/quantity of refrigerant added.
 - 3. Provide certifications for equipment showing the appliance has been tested and certified by ARI 740 test protocol.
- B. Provide OAR with servicing records documenting date and type of service and quantity of refrigerant added to DFW-owned equipment.
- C. Reclamation Facility: If refrigerant is recovered and sent to a reclamation facility, maintain on file:
 - 1. Name and address of reclamation facility.
 - 2. Service Technician Certification using USEPA Form "The United States Environmental Protection Agency (USEPA) Refrigerant Recovery or Recycling Device Acquisition Certification Form (OMB#2060-0256)".

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 SERVICE PRACTICE REQUIREMENTS

- A. Contractor shall not knowingly vent any refrigerant to the atmosphere. (CAA, Section 608) during maintenance, service, repair, and disposal of air-conditioning and refrigeration equipment.
- B. Only four types of releases are permitted under the prohibition:
 - 1. "De minimis" quantities of refrigerant released in the course of making good faith attempts to recapture and recycle or safely dispose of refrigerant.

2. Refrigerants emitted in the course of normal operation of air-conditioning and refrigeration equipment (as opposed to during maintenance, servicing, repair, or disposal of this equipment) such as from mechanical purging and leaks. However, USEPA requires the repair of leaks above a certain size in large equipment.
 3. Releases of CFCs or HCFCs that are not used as refrigerants: For instance, mixture of nitrogen and HCFC-22 that are used as holding charges or as leak test gases may be released, because in these cases, the ozone-depleting compound is not used as a refrigerant. However, a technician may not avoid recovering refrigerant by adding nitrogen to a charged system; before nitrogen is added, the system must be evacuated to the appropriate level. Otherwise, the CFC or HCFC vented along with the nitrogen will be considered a refrigerant. Similarly, pure CFCs or HCFCs released from appliances will be presumed to be refrigerants, and their release will be considered a violation of the prohibition on venting.
 4. Small releases of refrigerant that result from purging hoses or from connecting or disconnecting hoses to charge or service appliances will not be considered violations of the prohibition on venting. However, recovery and recycling equipment manufactured after November 15, 1993, shall be equipped with low-loss fittings.
- C. Follow proper evacuation procedures when opening refrigeration equipment.
- D. In order to ensure recovery of the correct percentage of refrigerant, technicians shall use the recovery equipment according to manufacturer's instructions. Technicians may also satisfy recovery requirements by evacuating the small appliance to four inches of mercury vacuum.

3.2 MOTORIZED VEHICLE AIR CONDITIONERS

- A. Obtain and maintain Refrigerant Certification as defined by USEPA 40 CFR Subpart 82.
- B. Use self-sealing or manual valves within 12-inches of the recovery or test hoses to reduce refrigerant loss.
- C. Recover refrigerant from mobile unit; ensure it remains at 0 psi or in a vacuum for 5 minutes.
- D. Record the amount of recovered refrigerant on work order.
- E. Repair and vacuum the unit.
- F. Verify unit stays in deep vacuum for 5 minutes and then recharge unit.
- G. Record the amount and type of refrigerant required to fill the unit on the work order.
- H. Sign and date the work order.

3.3 LEAK REPAIR

- A. Repair leaks within 30 days on equipment with charges of greater than 50 pounds when those combined leaks would result in the following loss rates:
 - 1. Commercial and Industrial Process Refrigeration Units: Thirty-five percent or more of the charge over a year.
 - 2. All Other Units (Including Comfort Cooling): Fifteen percent or more of the charge over a year.
- B. Report immediately any equipment which triggers the annual leak rate limits to EAD at 972-973-5560.

3.4 DISPOSAL

- A. Follow proper disposal procedures for dismantling refrigerant-containing equipment. Recover refrigerant in accordance with USEPA's requirements for servicing.
- B. Report immediately any accidental discharge of a refrigerant greater than 1000-pounds or more to EAD at 972-973-5560. EAD will notify the USEPA and Texas Commission on Environmental Quality of the occurrence.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. This specification addresses the need for and requirements of a construction site specific Spill Prevention Control and Countermeasures (SPCC) Plan if oil or oil products will be stored in above ground storage containers of 55 gallon size or more with a total onsite storage capacity of 1320 gallons or more during the construction project.

1.2 References

40 CFR 112 Oil Pollution Prevention

1.3 DEFINITIONS

- A. CM: DFW Airport Construction Manager.
- B. COC: Environmental Close-out Checklist. Document submitted at the end of the project to close-out the building permit.
- C. EAD: DFW Airport Environmental Affairs Department.
- D. Oil: Oil in any kind or in any form, including but not limited to: fats, oils; greases of animal, fish or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits or kernels; and other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil. Typical petroleum fuels are gasoline, diesel, and jet fuel.
- E. OAR: Owner's Authorized Representative.

1.4 SUBMITTALS

- A. Prior to permit approval, submit to EAD and the OAR a construction site specific Spill Prevention Control and Countermeasures (SPCC) plan which shall include an inventory of all applicable oil containing storage containers and equipment that will be stored onsite during construction. Examples include tanks, generators, drums, and large hydraulic equipment reservoirs. The site specific plan shall include, but not be limited to, the total capacity of each storage container, type of material stored, design information on secondary containment or diversionary methods utilized in order to prevent release of the material. SPCC regulatory requirements are outlined in federal regulation 40 CFR 112.

1.5 CHANGES TO INVENTORY OF OIL PRODUCTS

- A. If total onsite oil product storage volumes change, or the type of materials change, amend the site specific SPCC plan accordingly throughout the term of the project.
- B. If the volume of total onsite capacity of storage of oil products should drop below 1320 gallons before project closeout, the site specific SPCC may be discontinued after notifying and receiving approval from EAD.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 EXECUTION OF OIL STORAGE

- A. When oil or oil products will be stored in above ground storage containers of 55 gallons or more with a total onsite storage capacity of 1320 gallons or more during the construction, submit to EAD and PM a site specific SPCC plan.
- B. Monitor increases or decreases in total volume capacity during the remainder of the project.
- C. Remove all stored materials at completion of project and correct any spotting or evidence of spills created by the stored materials.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. This specification addresses the need for and requirements of the Contractor to provide design and/or construction information to DFW International Airport concerning modifications and/or additions in the storage of oil products. This information will be used by EAD to update the existing DFW Airport Spill Prevention Control and Countermeasure (SPCC).

1.2 DEFINITIONS

- A. CM: DFW Airport Construction Manager.
- B. COC: Environmental Close-out Checklist. Documents submitted at the end of the project to close-out the building permit.
- C. PM: DFW Airport Project Manager.

1.3 SUBMITTALS

- A. Submit to the PM an inventory of oil or oil product storage increases or decreases that are contained in the design drawings of the facility. The inventory shall include the capacity of each storage container added or removed, type of materials to be stored in each container, and design information on secondary containment or diversionary methods utilized by storage container. The inventory shall be submitted with 100% design drawings.
- B. Submit to the CM an inventory of all oil storage containers and equipment that is constructed or demolished during a project. The inventory shall include the capacity of each storage container added or removed, type of material stored in each container, and design information on secondary containment or diversionary methods utilized by the storage containers. The inventory shall be submitted with the environmental Close-out checklist (COC) at the end of the project. Project specific Environmental Construction Conditions (ECC) are issued with the Construction or Sign permit by DFW Code and Construction.

1.4 INVENTORY OF OIL AND OIL PRODUCTS

- A. If a project results in the change of the volume of storage of oil products, the inventory shall be submitted.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

- A. Submit to the CM/PM an inventory of oil or oil product storage increases or decreases that are planned at the times specified above.

- END OF SECTION -

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section provides guidelines for adherence to state, federal, DFW Airport, and local environmental regulations pertaining to storm water quality of the post construction facility.
- B. All new or renovated facilities must be designed so as to eliminate contamination of storm water, or at a minimum, reduce contamination of storm water runoff below the federal discharge benchmarks defined by federal law (65 FR 64767) and any subsequent applicable federal regulation, as well as those in the TPDES storm water permit and any subsequent applicable state regulation. The Operator of the facility will be responsible for meeting the discharge limitations over the lifetime of the facility.
- C. All new or renovated facilities must be designed in a manner to ensure that non-allowable, non-storm water discharges do not discharge or connect with the storm water collection system.

1.2 RELATED REQUIREMENTS

- A. DFW International Airport Board's (Board) Design Criteria Manual

1.3 REFERENCES

- A. 65 FR 64767
- B. 40 CFR 112
- C. Texas Water Code, Chapter 26 Water Quality Control
- D. 30 TAC 319, Subchapter A : Monitoring and Reporting System, Parts 11 – 12

1.4 DEFINITIONS

Term/Acronym	Definition
CM	DFW Airport Construction Manager
EAD	DFW Airport Environmental Affairs Department
EPA	U.S. Environmental Protection Agency
OAR	Owner's Authorized Representative
Operator	The company, agency, or entity that will have operational control of daily activities at the facility following the issuance of a Certificate of Occupancy/Use
PM	DFW Airport Project Manager
SPCC	Spill Prevention Control and Countermeasures
SWQMP	Storm Water Quality Management Quality
TCEQ	Texas Commission on Environmental Quality

TPDES

Texas Pollutant Discharge Elimination System

1.5 SUBMITTALS

- A. Preliminary Actions:** The Operator shall submit to the CM/PM the following documents along with any application for a construction permit to construct or renovate a facility from which there will be storm water discharge.
1. Documents describing the type and nature of all activities to occur at the facility that could potentially impact storm water quality. This should include a map that displays sources of storm water pollutants (e.g., material/equipment storage areas, vehicle parking areas, or loading areas). This map should also identify storm water drainage patterns and the location(s) for storm sampling.
 - i. Documents detailing the structural controls to be constructed at the facility to impel storm water discharges to meet EPA benchmark standards, by reducing the discharge of both point and non-point source pollutants (e.g., oil & grease, metals, sediment, and trash).
 - ii. The use of storm water filtration devices, oil/water separators, infiltration swales, vegetated channels, and rain gardens are also encouraged to reduce storm water runoff and improve the quality of runoff. (This is contractual document holding the contractor to accomplish something or not get paid. "Encourage" to build these comes at design phase not at here's the plans, hire the contractor, now build it phase. Need to rethink the use of paragraph b & c as to the intended viewer of contract spec documents.)
 - iii. The use of parking pavers is encouraged in porous pavement/asphalt to reduce storm water runoff volumes in vehicle parking areas and waiting areas.
 2. A certification, sealed by a Texas licensed professional engineer, stating that "Based upon the above representations made by the Operator, the proposed structural controls will impel storm water discharged from the facility to meet EPA benchmark standards."
 3. A certification, signed by the owner/operator of the facility, stating all structural controls supporting the facility will be maintained in manner to ensure effective operation and minimize the discharge of pollutants; and operators will develop and implement a Pollution Prevention Plan (P3) upon occupancy of the facility to identify all activities with the potential to impact the quality of storm water discharges (or general environmental compliance) and the best management practices to be implemented.
 4. Documents, prepared by the Operator, detailing the design criteria utilized to ensure effluent from fire suppression systems can either be released into sanitary sewer systems or easily collected and not discharged into the storm water collection system during required maintenance and flushing activities. In addition, Fire Suppression Systems are to have effluent testing ports and be plumbed in such a manner as to allow the capture of the effluent if deemed necessary.

5. Spill Prevention Control and Countermeasures Plan (SPCC): The design of any new or renovated facility must include a submittal by the Operator with a formal determination as to whether SPCC is required; and if so, the design must incorporate the measures specified in the Facility SPCC.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 GENERAL

- A. The submittal of the requested documents, according to Paragraph 1.5, is required prior to the issuance of a Construction or Sign Permit by DFW Code, Construction and Survey.

3.2 POST-CONSTRUCTION PROCEDURES

- A. Following construction of the facility, the DFW Building Official will issue a Temporary Certificate of Occupancy/Use when the facility meets the remaining requirements of DFW Code, Construction and Survey.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. Work in the section will only be required if specifically identified the individual delivery order. This section includes:
 - 1. Project identification signs.
 - 2. Temporary informational signs.

1.2 SYSTEM DESCRIPTION

- A. Performance requirements:
 - 1. Design sign and structure to withstand 70-miles/hr. wind velocities.
 - 2. Provide finishes/painting adequate to withstand weathering, fading and chipping for duration of Project.

1.3 SUBMITTALS

- A. Submit shop drawings of proposed project signs to Owner's Authorized Representative within 15 days of written Notice to Proceed showing content, layout, lettering, color, foundation details, structural materials, sizes and grades of members.

1.4 QUALITY ASSURANCE

- A. Provide signs painted by a professional sign painter with a minimum of three years experience in painting specified types of signs.

1.5 MAINTENANCE

- A. Maintain signs and supports in a neat, clean condition. Repair damages to structure framing or finish of sign.

PART 2 – PRODUCTS

2.1 SIGN MATERIALS

- A. Provide signs with new wood or metal framing in sound condition and structurally adequate to with stand specified loads.
- B. Provide 3/4 inch thick exterior grade A/D plywood with face veneers with medium density overlay suitable for specified finishes. Use standard large sizes sheets to minimize joints.
- C. Provide galvanized hardware.
- D. Paint:
 - 1. Paint sign background with two coats of exterior grade paint. Paint may be one coat of primer and one finish coat or two coats of self priming paint.
 - 2. Paint lettering on sign using one coat of exterior grade paint.
 - 3. Use colors selected by the Owner's Authorized Representative.

2.2 SIGNAGE

- A. Informational Signs:

1. Size of signs and lettering to be as required by regulatory agencies or as appropriate to usage.
 2. Colors to be as required by applicable regulatory agencies or otherwise of uniform colors throughout job as selected by Owner's Authorized Representative.
 3. Erect informational signs at locations necessary to provide required information.
 4. Graphics in styles and sizes as selected by Owner's Authorized Representative.
 5. Install at height for optimum visibility, on ground-mounted poles or as attached to temporary structural surfaces.
- B. Project Identification Sign:
1. Painted sign of size, lettering and construction shown on Drawings.
 2. Location and number on site as indicated by Owner's Authorized Representative.
 3. Paint graphics in styles and sizes as selected by Owner's Authorized Representative.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Provide an adequate number of information signs at locations as required to direct traffic and control access to the Project site, or provide other information to control the Work.
- B. Construct and erect project identification signs at locations shown on the Drawings or as approved by the Owner's Authorized Representative.

3.2 INSTALLATION

- A. Install signs within 30 days of written Notice to Proceed.
- B. Relocate informational signs as required by progress of work.

3.3 RELOCATION/REMOVAL

- A. Remove signs, framing, supports and foundations at completion of Project.
- B. Fill all holes left by removal of foundations by filling with sand or other properly compacted material as approved by the Owner's Authorized Representative.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements governing the selection of products for use in the project.

1.2 RELATED SECTIONS

- A. None

1.3 QUALITY ASSURANCE

- A. Within a period of 15 days after delivery order Notice to Proceed (NTP), submit to Owner's Authorized Representative five (5) copies of complete list of major Products, which are proposed for installation.
 - 1. Tabulate products by Specification Section number, title, and Article number.
 - 2. For products specified only by reference standards, list for each such product:
 - a. Name and address of manufacturer.
 - b. Trade name.
 - c. Model or catalogue designation.
 - d. Manufacturer's data including reference standards and performance test data.
- B. Owner's Authorized Representative will reply promptly in writing stating whether there is a reasonable objection to listed items. Failure to object to a listed item shall not constitute waiver of requirements of Contract Documents.
- C. Materials specified are to define a standard of quality or performance and to establish basis for evaluation of proposals and substitutions.
- D. Where materials or equipment are specified by trade or brand name, it is not intended to omit equivalent products of another manufacturer, except where specifically noted.
- E. Comply with individual Specification Sections and referenced standards as minimum requirements.
- F. Compatibility: When given the option of selecting between two or more products, product selected shall be compatible with products previously selected, even if previously selected products were also options.
- G. Components required to be supplied in quantity within Specification Section shall be of same manufacturer and shall be interchangeable.

- H. Nameplates and Labels: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trade marks on surfaces of products which will be exposed to view in occupied spaces (including elevators) or on the exterior:
 - 1. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface approved by Architect and governing authorities.
 - 2. Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface, which is inconspicuous in occupied spaces.
- I. Cord and Plug: Provide minimum 6-foot cord and plug including grounding connector for connection to electric wiring system. Cord of longer length is specified in individual specification sections.

1.4 SUBMITTALS

- A. Proposed Products List: Submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
 - 1. Submit within thirty (30) days after date of Notice to Proceed, or as stated in delivery order.
 - 2. For products specified only by reference standards, list applicable reference standards.
- B. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturer's standard data to provide information specific to this Project.
- C. Shop Drawing Submittals: Prepared specifically for this Project.
- D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- E. Additional requirements for submittals are described in Section 01 33 23, Shop Drawings, Product Data and Samples.

1.5 MANUFACTURER'S INSTRUCTIONS

- A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in installation, including two copies each to Architect/Engineer and Owner's Authorized Representative.
 - 1. Maintain one set of complete instructions at job site during installation and until completion.

- B. Handle, install, connect, clean, condition and adjust products in accordance with such instructions and conformity with specified requirements.
 - 1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Owner's Authorized Representative for further instructions.
 - 2. Do not proceed with work without clear instructions.
- C. Perform work in accordance with manufacturer's instructions. Do not omit preparatory steps or installation procedures unless specifically modified or exempted by Contract documents.

1.6 TRANSPORTATION AND HANDLING

- A. When products are specified by only one manufacturer's model or performance criteria with reference to other acceptable manufacturers, other manufacturer's products must meet minimum performance criteria specified or meet quality of model specified. Products submitted by other acceptable manufacturers must conform to dimensional requirements of listed products and systems, or Contractor shall provide modifications to construction.
- B. For products specified by naming one product or indicating option of selecting equivalent products by stating "or equal", "or other approved manufacturer", or other similar language, submit request as required for substitutions for any product of any manufacturer not specifically named.
- C. For products specified by naming only one product followed by statement "no substitutions", or other similar language, there is no option.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Arrange deliveries of products in accordance with construction schedules, coordinate to avoid conflict with work conditions at site.
 - 1. Deliver products in undamaged condition, in manufacturer's original containers or packaging with identifying labels intact and legible.
 - 2. Immediately on delivery, inspect shipments to ensure compliance with requirements of Contract documents and approved submittals, and that products are properly protected and undamaged.
- F. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

PART 2 – PRODUCTS

2.1 MANUFACTURE DATE/AGE OF EQUIPMENT

- A. All materials incorporating rubber or plastic components shall be manufactured not more than 18 months prior to their installation date.
- B. All materials and equipment shall have a “date of manufacture” attached or affixed to the units.

PART 3 – EXECUTION

Not Used.

- END OF SECTION -

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

- 1. The storage and protection of construction materials.**
- 2. The maintenance of the storage.**

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 STORAGE, GENERAL

- A. Store products, immediately upon delivery at a location approved by the Owner's Authorized Representative, in accordance with manufacturer's instructions, with seals and labels intact. Protect until installed. Do not store material in the ramp/operational terminal areas except in areas approved by the Owner's Authorized Representative.**
- B. Deliver products and materials to the Site in time to prevent delays in construction.**
- C. Deliver products that are too large to fit through openings to the Site in advance of the time enclosing walls and roofs are erected. Set in place, raised above floor on cribs.**
- D. Arrange storage in a manner to provide access for maintenance of stored items and for inspection.**
- E. Inspect stored products frequently to ensure that the products are maintained in acceptable conditions.**
- F. Replace any damaged products. Time extension will not be given for re-ordering of the damaged products.**
- G. Provide access to the Owner's Authorized Representative for progress payment verification and approval purposes.**
- H. Arrange for ordering and storing approved long lead items.**
- I. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.**

3.2 ENCLOSED STORAGE

- A. Store products, subject to damage by the elements, in substantial weather-tight enclosures.**
- B. Maintain temperature and humidity within ranges stated in manufacturer's instructions.**
- C. Provide humidity control and ventilation for products as required by manufacturer's instructions.**

- D. Store unpacked and loose products on shelves, in bins, or in neat groups of like items.

3.3 EXTERIOR STORAGE

- A. Provide substantial platforms, blocking, or skids, to support fabricated products above ground; slope to provide drainage. Protect products from rusting, disfigurement, soiling, staining and damage.
- B. Cover products subject to deterioration from exposure to the elements with impervious sheet materials. Provide ventilation to avoid condensation.
- C. Store loose granular materials on clean, solid surfaces such as pavement, or on rigid sheet materials, to prevent mixing with foreign matter.
- D. Provide positive surface drainage to prevent erosion and ponding of water.
- E. Prevent mixing of refuse or chemically injurious materials or liquids.
- F. Do not stockpile materials higher than 30 feet unless shown otherwise in plans.

3.4 MAINTENANCE OF STORAGE

- A. Inspect stored products on a scheduled basis.
- B. Verify that storage facilities comply with manufacturer's product storage requirements.
- C. Verify that manufacturer required environmental conditions are maintained throughout the storage life.
- D. Verify that surfaces of products exposed to the elements are not adversely affected; that any weathering of finishes is acceptable under requirements of Contract Documents.

3.5 MAINTENANCE OF EQUIPMENT STORAGE

Protect and maintain mechanical and electrical equipment in storage.

1. Provide Supplier's service instructions on the exterior of the package.
2. Service equipment on a regular basis as recommended by the Supplier. Maintain a log of maintenance services. Submit the log as Record Data at the completion of the Project.
3. Provide power to and energize space heaters for all equipment for which these devices are provided.
4. Provide temporary enclosures for all electrical equipment, including electrical systems on mechanical devices. Provide and maintain heat in the enclosures until equipment is energized.

- END OF SECTION -

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Mobilization of equipment, personnel, material, supplies, tools, and all other resources necessary prior to beginning the work.
 - 2. Establishment of temporary facilities and all other Facilities necessary prior to beginning the work.
- B. Final Cleanup
 - 1. Complete clean up and submit all required final documentation prior to move-out.
- C. Measurement Procedures
 - 1. Measurement of the item "Mobilization" as specified herein will be by the "Lump Sum," as the work progresses as specified in the Contract.
- D. PAYMENT PROCEDURES
 - 1. When 1% of the adjusted contract amount is earned, 50% of the mobilization lump sum bid or 5% of the total contract amount, whichever is less, will be paid. Previous payments under this item will be deducted from this amount.
 - 2. When 5% of the adjusted contract amount is earned, 75% of the mobilization lump sum bid, or 10% of the total contract amount, whichever is less, will be paid. Previous payments under this item will be deducted from this amount.
 - 3. When 10% of the adjusted contract amount is earned, 90% of the mobilization lump sum bid or 15% of the total contract amount, whichever is less, will be paid. Previous payments under this item will be deducted from this amount.
 - 4. Upon completion of all work under this contract, payment for remainder of the lump sum price for mobilization will be made.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 PROJECT INITIATION

- A. Complete all required coordination and forms, submit permits and insurance certificates prior to beginning any construction activity at the Airport.
- B. The Contractor may complete all required temporary facilities as outlined in Division 01 Sections prior to other construction activities and complete the move-in process.
- C. Establish project submittals procedures, construction schedule and payment procedures.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. Direct-buried fuel, gas and water pipes, and electric, fiber-optic, navigational aid, security and telephone cables are located both inside and outside the Air Operations Area (AOA). These critical utilities must not be damaged during trenching and earthmoving operations. Any cut NAVAID cable could have disastrous consequences. This Section governs the process for field location of all underground utilities in areas to be improved.

1.2 CONSTRUCTION METHODS

- A. Protect utilities, utility appurtenances and cables encountered during construction. Do not use mechanical equipment of any kind to verify utility locations. Immediately repair damaged utilities.
- B. Contact all companies maintaining utilities at the Airport two weeks prior to any excavation to obtain all available as-built information or written clearance from each utility to dig in the construction area. Obtain approval from DFW to excavate in the construction area. Provide the Owner's Authorized Representative with written documentation of how utility locations were verified using the attached DFW Airport Utility Location Sign-Off Sheet.
- C. Maintain utilities for facilities and/or systems, which are or may be affected by work associated with the project. Prepare and maintain a contingency plan, approved by the Owner's Authorized Representative, to restore to service all utilities and/or control/signal cables which may be placed out of service or damaged during performance of the work. Provide immediate notification to D/FW Airfield Operations and D/FW Airport Energy Transportation and Asset Management Department through the Owner's Authorized Representative on all damage to underground utilities, and follow up with written reports using the attached Underground Utility Damage Report. Locate all underground utilities within project areas to be excavated, trenched or drilled. Hand dig to locate utilities and once located, mark with highly visible and durable markers along all such utility routes at intervals of not greater than 25 feet. Use markers that identify the utility located and the utility owner. Obtain Owner's Authorized Representative approval of proposed marking devices. Maintain these markers throughout the Project. Providing a field survey of the marker locations. Incorporate this survey information in Record documents. Replacing any disturbed markers.
- D. Additional Contractor Responsibilities:
 - 1. Develop an overall utility and cable map showing the location and depth of all underground utilities in the area of construction. Add the location and depth of all subsurface utilities uncovered in the construction area exposed during construction. Include the field survey information and other utility information provided by the Federal Aviation Administration, DFW and utility companies. Maintain a current copy of the map in the Contractor's office. Provide this map to the Owner at the completion of the project.

2. At the beginning of each work period check the utility and cable map for cables and utilities in the areas of work
 3. Expose the utility hand digging after the Contractor performs a circuit lock out in accordance with Section 01 35 13.13, Special Project Procedures for Airport Facilities in the case of AOA circuits. The utility must be visibly exposed. Explore area five (5) feet on each side of the exposed utility for other utilities.
 4. Stop excavation and notify OAR immediately if sand or other bedding material is observed in trenches or excavations. Instruct equipment operators to stop work immediately and notify their supervisor if bedding or any other material differing from native material is observed.
- E. Repair damaged NAVAID Cables. Install either a pull box or manhole or completely replace the cable depending on the type and or size of the NAVAID Cable. The FAA will determine whether a pull box, manhole or complete cable replacement is required

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

PART 4 – APPENDIX

- 4.1 The following documents/forms attached are a part of the Specification.
- A. DFW Airport Utility Location Sign-Off Sheet
 - B. Underground Utilities Damage Report

- END OF SECTION -

DFW AIRPORT UTILITY LOCATION SIGN-OFF SHEET

EXCAVATION SHALL NOT PROCEED IN THE AREA DESCRIBED BELOW UNTIL THIS FORM IS PROPERLY COMPLETED.

DATE: _____

LOCATION OF UTILITY: _____

DFW MAPSCO#: _____

TYPE OF UTILITY: _____

UTILITY FIELD LOCATION CONFIRMATION#: _____ DATE: _____

DATE FIELD LOCATION OCCURRED: _____ N/A: _____

DATE UTILITY UNCOVERED FOR OBSERVATION: _____ N/A: _____

LOCATION UTILITY WILL IMPACT PROPOSED WORK: YES ☐ NO ☐

COMMENTS:

DATE AS-BUILT INFORMATION FOR UNCOVERED UTILITY OBTAINED: _____

The Contractor verifies, by signature below, that a thorough examination of all available as-built information has been made and that a field investigation to locate any utilities in the work area, where the proposed excavation will occur, has been made.

Contractor's Representative: _____ Date: _____

Concurrence by

Owner's Authorized Representative: _____ Date: _____

CC: DCC Project Manager

DCC. – Quality Assurance Representative

Airport Operations

Dallas / Fort Worth International Airport

OPERATIONS DEPARTMENT

UNDERGROUND UTILITIES DAMAGE REPORT

DATE: _____ TIME: _____ CONTRACT No.: _____

PROJECT: _____ CONTRACTOR: _____

UTILITY: _____

LOCATION (Attach sketch, including location, depth, etc.): _____

TIME/DATE RETURNED TO SERVICE: _____ WAS UTILITY MARKED? _____

WAS EXCAVATION EQUIPMENT USED? WHAT KIND? _____

DESCRIBE HOW DAMAGE OCCURRED: _____

WHAT PRECAUTIONS WERE TAKEN? _____

COMMENTS/RECOMMENDATIONS: _____

ATTACHMENTS: _____

SIGNED _____

cc: Airfield Operations Projects and Standards Administrator

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes requirements and limitations of cutting and patching of work.

1.2 DESCRIPTION OF REQUIREMENTS

- A. Coordinate the patching of surfaces and finishes in areas where existing items are removed. Drilling the work to install fasteners and similar operations are excluded from the definition of cutting-and-patching.
- B. Adhere to all safety precautions as outlined in Section 01 11 00, Summary of Work.
- C. Refer to other sections of these specifications for specific cutting-and-patching requirements and limitations applicable to individual units of work.

1.3 SUBMITTALS

- A. Submit written request to Owner's Authorized Representative (OAR) in advance of executing cutting or alteration, other than required by Contract Documents, which affects:
1. Work of Owner or any separate contractor.
 2. Structural value or integrity of any element of Project.
 3. Integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.
 4. Efficiency, operational life, maintenance or safety of operational elements.
 5. Visual qualities of sight-exposed elements.
- B. Request shall include:
1. Identification of Project.
 2. Location and description of affected work.
 3. Necessity for cutting, alteration or excavation.
 4. Effect on work of Owner or any separate contractor, or on structural or weatherproof integrity of Project.
 5. Description of proposed work:
 - a. Scope of cutting, patching, alteration, or excavation.
 - b. Trades who will execute work.
 - c. Products proposed to be used.
 - d. Extent of refinishing to be done.
 - e. Cost proposal when applicable.
 6. Alternatives to cutting and patching.
 7. Written confirmation from manufacturer or installer of existing affected work that cutting and patching work will not void warranty.

- C. Submit request for substitution as specified in Section 01 61 16, Materials and Equipment should conditions of Work or schedule indicate change of products from original installation.
- D. Submit written notice to Owner's Authorized Representative designating date and time the work will be uncovered or altered.

1.4 COORDINATION

- A. Coordinate cutting and patching work with manufacturer and installer of warranted materials, products or systems to avoid voiding warranty where warranties are in force for the existing work.

1.5 QUALITY ASSURANCE

- A. Requirements for Structural Work: Do not cut-and-patch structural work in a manner resulting in a reduction of load-carrying capacity or load/deflection ratio.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Provide materials for cutting-and-patching which will result in equal-or-better work than the work being cut-and-patched, in terms of performance characteristics and including visual effect where applicable. Comply with the Specification requirements, and use materials comparable with the original materials and where recognized that satisfactory results can be produced thereby.
- B. Submit request for further direction should conditions of work or schedule indicates change of products that are not comparable with the original installation.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine existing conditions of Work, including elements subject to damage or to movement during cutting, patching, excavating, and backfilling.
- B. Examine conditions affecting installation of Products, or performance of work.
- C. Report unsatisfactory or questionable conditions to Owners Authorized Representative. Do not proceed with work until notified by OAR to do so.

3.2 INSTALLATION

- A. Do not cut-and-patch structural work in a manner resulting in a reduction of load-carrying capacity or load/deflection ratio. Provide adequate temporary support for work to be cut, to prevent failure. Do not endanger other work.
- B. Provide adequate protection of other work during cutting-and-patching, to prevent damage; and provide protection of the work from adverse weather exposure.
- C. Maintain excavations free of water.
- D. Conform to requirements for temporary barriers, enclosures, and controls described in Section 01 50 00, Temporary Facilities and Controls.

3.3 DUST CONTROL

- A. Provide positive methods of dust control and apply dust control materials to minimize raising dust from cutting and patching operations.

3.4 PERFORMANCE

- A. Patch with seams which are durable. Complete with specified tolerances for the work.
- B. Employ skilled tradesmen to perform cutting-and-patching.
- C. Cut work by methods least likely to damage work to be retained and work adjoining.
 - 1. Flame cutting of the reinforcing bars is discouraged but permitted if in compliance with the requirements of the American Welding Society's AWS D.1.1 and D.1.4 by an experienced welder and as per directions by the Owner's Authorized Representative (OAR). Flame cutting in the AOA is not permitted.
 - 2. Where physical cutting action is required, cut work with sawing and grinding tools, not with hammering and chopping tools. Core drill openings through the concrete.
- D. Fit work to pipes, sleeves, ducts, conduit and other penetrations through surfaces as called for elsewhere in these Specifications. Allowing for movement where movement is required. Fill space around pipe or insert with material with physical characteristics equivalent to fire-resistant requirement of penetrated surfaces where fire-rated separations are penetrated.
- E. Restore exposed finishes of patched areas; and, where necessary, extend finish restoration onto retained work adjoining, in a manner, which will minimize evidence of patching.
- F. Refinish entire affected surface as necessary to provide even finish similar to adjacent finishes.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. Clean area and dispose of waste materials, debris, and rubbish during construction.

PART 2 – PRODUCTS

2.1 EQUIPMENT

- A. Provide covered containers for waste materials, debris, and rubbish.

PART 3 – EXECUTION

3.1 CLEANING

- A. Remove waste materials, debris, and rubbish at least daily. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, culverts, and other closed or remote spaces prior to closing the space.
- C. Clean interior areas prior to application of finishes, and maintain in a clean condition to eliminate dust.
- D. Avoid causing flying debris in the ramp areas or near the airfield.
- E. Keep the AOA and all haul routes free of any debris that may be generated from a construction activity.

3.2 DISPOSAL

- A. Collect and remove waste materials, debris, and rubbish from site per Section 01 74 19 Construction Waste Management and Disposal.

3.3 OWNER'S RIGHT TO CLEAN UP

- A. Owner may provide progress cleaning if Contractor fails to comply with this Section. Owner will deduct the cost of this cleanup effort from the Contract Price from the next Application for Payment.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. Manage and dispose of waste during construction operations.
- B. Minimize construction waste and debris and salvage and recycle to the greatest extent practical Consistent with the DFW Goals described in Paragraph 1.6.
- C. Report weights of materials recycled and materials not recycled or reused throughout the project.
- D. Remove all Contractor-generated Waste from Airport property and dispose of properly.
- E. Costs associated with the containerizing, storing, transportation and disposal of solid waste, including hazardous, nonhazardous or specially regulated wastes, in solid or liquid form, is the responsibility of the Contractor.
- F. Costs associated with performing "verification" analytical sampling of soils that fail screening requirements as described in the project specific soil management plan are the responsibility of the contractor
- G. Analytical samples for disposal profiling of soil, special wastes, hazardous wastes or universal wastes shall be performed as stated in the contract.
- H.

1.2 RELATED REQUIREMENTS

- A. Section 01 41 00, Regulatory Requirements
- B. Section 01 57 13, Temporary Erosion Control
- C. Section 01 57 19.13, Spill Response Plan
- D. Section 01 57 19.16, Concrete Slurry Waste
- E. Section 01 74 19.13, Waste Characterization

1.3 DEFINITIONS

- A. Definitions as defined 30 TAC 335.
- B. Generator:
 - 1. Existing DFW site/facility – the waste generated is to be managed as DFW Airport generated wastes.
 - 2. All waste resulting from materials brought on-site by Contractor or waste resulting from Work that are not DFW Airport waste are to be managed as Contractor generated waste.
- C. Construction, Demolition, and Land Clearing (CDL) Waste: Includes all non-hazardous solid wastes resulting from construction, remodeling, alterations, repair, demolition and land clearing. Includes material that is recycled, reused, salvaged or disposed as garbage.
- D. Salvage: Recovery of materials for on-site reuse.
- E. Reuse: Making use of a material without altering its form. Materials can be reused on-site or reused on other projects off-site, as approved by DFW.

- F. Recycling: The process of sorting, cleaning, treating, and reconstituting materials for the purpose of using the material in the manufacture of a new product.
- G. Source-Separated CDL Recycling: The process of separating recyclable CDL materials in separate containers as they are generated on the job-site. The separated materials are hauled directly to a recycling facility or transfer station.
- H. Co-mingled CDL Recycling: The process of collecting mixed recyclable CDL materials in one container on-site. The container is taken to a material recovery facility where materials are separated for recycling.
- I. Approved Recycling Facility: Any of the following:
 - 1. A facility that can legally accept CDL waste materials for the purpose of processing the materials into an altered form for the manufacture of a new product.
 - 2. Material Recovery Facility: A general term used to describe a waste-sorting facility. Mechanical, hand-separation, or a combination of both procedures are used to recover recyclable materials. Co-mingled containers are to be taken to a material recovery facility with at least a 50% co-mingled recycling rate.

1.4 ABBREVIATIONS

- A. CDL: Construction, Demolition and Land Clearing Waste
- B. CFR: Code of Federal Regulations.
- C. EAD: DFW Airport Environmental Affairs Department.
- D. EPA: Environmental Protection Agency.
- E. TAC: Texas Administrative Code.
- F. WMP: Waste Management Plan

1.5 REFERENCES

- A. The following is a list of standards which may be referenced in this Section:
 - 1. U.S. Code of Federal Regulations:
 - a. Title 29 Part 1910, Occupational Safety and Health Standards
 - b. Title 40 Part 61, National Emission Standards for Hazardous Air Pollutants
 - c. Title 40 Part 260, Hazardous Waste Management System: General
 - d. Title 40 Part 261, Identification and Listing of Hazardous Waste
 - e. Title 40 Part 262, Standards Applicable to Generators of Hazardous Waste
 - f. Title 40 Part 263, Standards Applicable to Transporters of Hazardous Waste
 - g. Title 40 Part 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

- h. Title 40 Part 266, Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
- i. Title 40 Part 268, Land Disposal Restrictions
- j. Title 40 Part 273, Standards for Universal Waste Management
- k. Title 40 Part 279, Standards for The Management of Used Oil
- l. Title 49 Part 172, Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
- m. Title 49 Part 173, Shippers – General Requirements for Shipments and Packaging
- n. Title 49 Part 174, Carriage by Rail
- o. Title 49 Part 177, Carriage by Public Highway
- p. Title 49 Part 178, Specifications for Packaging
- q. Title 49 Part 179, Specifications for Tank Cars
- 2. Texas Administrative Code:
 - a. TAC Title 30 Chapter 332, Composting
 - b. TAC Title 30 Chapter 335, Industrial Solid Waste and Municipal Hazardous Waste
- 3. Environmental Protection Agency Guidance: Characterization of Building-Related Construction and Demolition in the United States.
- 4. Texas Commission on Environmental Quality Guidance:
 - a. Guidelines for the Classification and Coding of Industrial and Hazardous Wastes (RG-22)
 - b. Transporting Waste in Texas – A Guide to Regulation (RG-086)
 - c. Rules and Regulations for Small Quantity Generators (RG-234)
- 5. DFW Airport Publications:
 - a. Green Building Standards
 - b. DFW Terminal Development Program Sustainability Report

1.6 WASTE MANAGEMENT GOALS

- A. DFW's waste management goals include increased recycling and conservation of materials. CDL Wastes have been identified as a particular target for recycling and salvage for several reasons:
 - 1. CDL debris typically represents a large volume of material
 - 2. Many of the waste streams generated during building demolition and construction projects are highly recyclable
 - 3. DFW would prefer to recycle and salvage rather than add to local landfills
 - 4. DFW would like to reduce disposal costs

- B. DFW has determined that reducing the amount of waste disposed of in this project is a high priority. The Contractor and subcontractors shall take steps to generate the least amount of waste possible by minimizing waste due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Of the inevitable waste that is generated, as many of the waste materials as economically feasible shall be segregated for salvage, recycling, or recycled as mixed debris. Waste disposal in landfills and incinerators shall be minimized and shall be considered the alternative of last resort.
- D. CDL waste materials that can be salvaged or recycled include, but are not limited to the following:
 - Ferrous Metals (Steel)
 - Non-Ferrous Metals (Copper and Stainless Steel)
 - Tin
 - Aluminum
 - Asphalt
 - Concrete
 - Carpet
 - Wood

1.7 QUALITY ASSURANCE

- A. Conduct construction waste management activities in accordance with applicable laws, codes and ordinances.
- B. Preconstruction Conference: Review methods and procedures related to waste management including, but not limited to, the following:
 - 1. Develop a Waste Management Plan to document quantities of each type of materials that will be salvaged, recycled, or disposed of as waste.
 - 2. Develop procedures which appropriately identify how materials will be separated, the type of containers or bins where materials will be stored, and how materials will be disposed or recycled. Verify the availability of containers and bins need to avoid delay..
 - 3. Review waste management requirements for each trade.
 - 4. Plan site logistics to coordinate the location of dumpsters.

1.7 WASTE MANAGEMENT PLAN

- A. Provide a waste management plan (WMP) which includes information on the type of solid waste, storage method, handling and transportation procedures, disposal location and how the wastes will be handled in accordance with applicable federal, state and local rules and regulations.
- B. Include in the WMP a description of how the plan will be conveyed to each new subcontractor that comes onto the site and how containers will be identified.
- C. Revise and resubmit when additional waste streams are identified, to make corrections, changes in disposal locations or as required by the OAR.

- D. Approval of Contractor's Waste Management Plan will not relieve the Contractor of responsibility for compliance with applicable environmental regulations.

1.8 WASTE MANAGEMENT REPORT

- A. Provide a Waste Management Report weekly on the form included at the end of Part 4. Provide a cumulative Waste Management Report monthly, with the following attachments:
 - 1. A record of the type and quantity, by weight, of each material salvaged, re-used, recycled or disposed.
 - 2. Total quantity of waste recycled as a percentage of total waste. DFW Green Building Standards state that 75% is the goal of CDL that should be recycled.
 - 3. Copy of disposal receipts issued by a disposal facility for CDL waste that is disposed in a landfill.
 - 4. Copy of recycling receipts issued by approved recycling facilities for co-mingled materials. Including weight tickets from the recycling hauler or material recovery facility and verification of the recycling rate for co-mingled loads at the facility.
 - 5. Document the types and quantities, by weight, for materials salvaged for reuse on site, sold or donated to a third party.
 - 6. Provide a copy of monetary credit receipts issued to sub-Contractor by a disposal facility.

1.9 SUBMITTALS

- A. Submit Waste Management Plan to OAR not less than 10 days before the Preconstruction meeting.
- B. Submit copies of manifests for all Contractor-generated hazardous and Class 1 waste to the OAR, monthly.
- C. Submit copies of weekly Waste Management Reports, in accordance with Section 1.8 WASTE MANAGEMENT REPORT, to the OAR and to EAD
- D. Submit manifests, weight tickets, receipts, and invoices specifically identifying the Project and waste material, in accordance with Section 1.8 WASTE MANAGEMENT REPORT.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 WASTE MANAGEMENT CONTRACTING

Contract waste services with a qualified waste handling firm to dispose of all construction waste on the project. The waste handling firm will contract to a recycling firm and will transport both non-recyclable construction waste (to a DFW approved landfill location) and the recyclable materials (to the contracted recycling agency).

Upon receipt of the recyclable materials, the recycling agency will weigh and classify the recyclable materials received from the waste handling firm. The recycling agency will issue a batch ticket for each load specifying the weight, classification and reimbursement rate of the materials delivered. The recycling agency will pay the waste handling firm for the

recycled materials received at which time the waste handling firm will document the amount received from the recycling agency.

When submitting the monthly pay request to the Contractor, the waste handling firm will provide a credit for the recycled materials which will be deducted from the monthly pay request to the Contractor. When the Contractor submits its monthly Waste Management Report to the OAR, the Contractor will document the credit received from the waste handling firm and will report to DFW the value of the credit as well as the weight of materials recycled.

3.2 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Procure own generator identification if necessary, in accordance with 30 TAC 335, and properly dispose of all solid waste.
- B. Provide copies of the Waste Management Plan to the job site foremen, each Subcontractor, the Owner and the Architect.
- C. Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse and return methods to be used by all parties at the appropriate stages of the Project.
- D. Conduct waste management meetings during the weekly Safety meeting to share and discuss waste management goals.
- E. Labeling and Containers:
 - 1. Label all containers in accordance with 30 TAC 335 Subchapter C and 40 CFR 262 & 264
 - 2. Package and label wastes to comply with Department of Transportation. DOT labeling requirements as specified in 49 CFR Parts 172, 173, 174, 177, 178, and 179 if transporting.
 - 3. Provide containers for CDL waste that is to be recycled clearly labeled as such with a list of acceptable and unacceptable materials. The list of acceptable materials must be the same as the materials recycled at the receiving material recovery facility or recycling processor.
 - 4. The collection containers for recyclable CDL waste must contain no more than 10% non-recyclable material, by volume.
 - 5. Provide containers for CDL waste that is disposed in a landfill clearly labeled as such.
 - 6. Use detailed material estimates to reduce risk of unplanned and potentially wasteful cuts.
 - 7. To the greatest extent possible, include in material purchasing agreements a waste reduction provision requesting that material and equipment be delivered in packaging made of recyclable material, that they reduce the amount of packaging, that packaging be taken back for reuse or recycling, and to take back all unused product. Insure that subcontractors require the same provisions in their purchase agreements.
 - 8. Conduct regular visual inspections of dumpsters and recycling bins to remove contaminants and verify correct labeling.

9. Bins shall be protected during non-working hours from off-site contamination.
- F. Storage:
1. Store wastes by classification and type, following 30 TAC 335. See "Guidelines for the Classification and Coding of Industrial and Hazardous Wastes" for more information.
 2. Place waste only in containers specifically marked and labeled for that waste. Provide containers compatible with the applicable waste stream.
 3. Waste containers must be in good condition and kept closed when waste is not being added or removed.
 4. Do not store incompatible wastes near one another.
 5. Space containers sufficiently apart to allow access in case of emergency.
 6. Do not store wastes beyond the permissible length of time, as specified in 30 TAC 335 Chapter C.
 7. Clearly label each container, indicating the type of materials for separated recyclable material.
 8. Do not commingle regulated materials such as fluorescent lamps, fluorescent lamp ballasts, mercury containing equipment, and batteries with CDL waste. Ensure all hazardous, universal, or other regulated waste materials are segregated from CDL materials and appropriately disposed.
 9. Retain DFW Airport generated wastes on DFW Airport property in a secure location until waste characterization is complete and waste is ready for disposal.
- G. Inspections:
1. Inspect waste storage areas weekly to ensure proper handling of wastes.
 2. At a minimum, inspections should look for:
 - a. Presence of spilled material
 - b. Integrity of secondary containment structure
 - c. Maintenance of emergency pathways
 - d. Integrity of containers (evidence of leaking, bulging, or corroding)
 - e. Closed and secured container lids or covers
 - f. Accurate and complete container labels
 - g. Segregation of containers by hazard class
 - h. Storage capacity of accumulation area
 - i. Segregation of fluorescent lamps, fluorescent lamp ballasts, mercury containing equipment and batteries from the CDL waste.
- H. Handle spills in accordance with Section 01 57 19.13, Spill Response Plan.
- I. Disposal:

1. Remove CDL waste materials from project site on a regular basis. Do not allow the CDL waste to accumulate on-site.
2. Transport CDL waste materials off Owner's property and properly dispose of them.
3. Waste shall be disposed of in a timely manner and prior to project closeout. Universal Wastes must be disposed of within one year from the date of generation. Hazardous wastes must be disposed of within 6 months of the initial date of generation.
4. Only dispose of wastes at facilities identified in the WMP. Submit an amended WMP and obtain EAD approval for locations not on the original WMP submitted prior to transporting wastes to that location.

Arrange for collection by or delivery to the appropriate reuse or disposal facility, after prior approval by EAD. Use only Disposal/Recycling facilities that are permitted and in good standing with the Texas Commission on Environmental Quality. A list of pre-approved disposal facilities is provided as Appendix C of this section. The selection of disposal facilities is not limited by this list: alternate facilities may be approved by EAD on a case by case basis. The selected disposal facility must be identified in the WMP. A list of active North Texas disposal facilities (landfills and recycling centers) is available on the North Central Texas Council of Governments website at the following link:

<http://www.nctcog.org/envir/SEELT/disposal/facilities/landfills.asp>

5. Waste may not leave airport property without the proper shipping paperwork. When the waste is ready for disposal it must be transported by a licensed DOT transporter and all shipping documents need to be signed by a DFW Airport Board Employee and the shipping documents must be provided to the EAD Waste Analyst..
6. Only the designated EAD staff or Board representative as appointed by the EAD Manager of Environmental Operations may sign waste manifests for DFW Airport generated wastes.
7. Contractor or contractor's representative signs waste manifests for contractor generated wastes.
8. Maintain documentation of appropriate disposal of all solid waste.

PART 4 – APPENDIX

- 4.1 The following documents/forms attached following "End of Section" are a part of the Specification.
 - A. Waste Management Plan
 - B. Waste Management Report Form
 - C. Pre-Approved Local Disposal/Landfill Facilities – 2015

- END OF SECTION -

Waste Management Plan

If you have to get rid of it, it's a waste!

Project Name: _____

Permit Number: _____

Site Superintendent: _____

Phone: _____

Communication Plan:

How plan will be conveyed to each new sub-contractor and how containers will be identified.

List types of wastes that MAY be generated by your project.
If your project will generate excess soil, please list that as well.

Type of Solid Waste (i.e. concrete slurry, concrete washout, soil, wood, drywall, fire suppression water, light bulbs, asbestos waste etc..)	Storage Method prior to disposal (drums, roll-off, dumpster, etc)	Transporter (How will it get to the Disposal Location?)	Disposal/Recycli ng Location (Where is it going?)

Preparer's

Signature: _____

Date: _____

Waste Management Report

Project Name: _____

Permit Number: _____

Site Superintendent: _____

Phone: _____

Reporting Period: _____

Total Credit Value for Reporting Period: _____

WASTE MANAGEMENT REPORT					
MATERIAL	Unit	DISPOSED IN MUNICIPAL SOLID WASTE LANDFILL	DIVERTED FROM LANDFILL BY RECYCLING, SALVAGE, REUSE		
			Recycled	Salvage	Reuse
i.e.: Asphalt	cy		50		
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
Total (In Weight)			(Total of All Above Values - In Weight)		
Percentage of Waste Diverted			(Total Waste / Total Diverted)		

Be sure to include:

- 1. Disposal Receipts** - Copy of receipts issued by a disposal facility for CDL waste that is disposed in a landfill.
- 2. Recycling Receipts** - Copy of receipts issued by approved recycling facilities for co-mingled materials. Including weight tickets from the recycling hauler or material recovery facility and verification of the recycling rate for co-mingled loads at the facility.
- 3. Salvage Documentation** - Types and quantities, by weight, for materials salvaged for reuse on site, sold or donated to a third party.
- 4. Credit Receipts** - Copy of monetary credit receipts issued by a disposal facility.

Preparer's Signature: _____

Date: _____

Document Title: CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**Section: 01 74 19****DFW International Airport****Pre-Approved Disposal/Landfill Facilities – 2015**

These facilities have been reviewed or "pre-approved" by EAD, but are not intended to limit the options of a contractor. Submission of alternate choices will be reviewed and approved on an individual basis.

Category No. Category Description					
1	Landfill				
2	Waste Water				
3	Recycle				
Name & Phone No.	Affiliation	TX ID	EPA ID	Category	Hazardous/ Non-Hazardous
CSC Disposal and Landfill 800-256-9278	Republic Waste Services 101 Republic Way, Avalon, TX 76623	H1209	TXD000836585	1, 2, 3	Non-Hazardous
DFW RDF Landfill 972-316-2296	Waste Management 1600 S Railroad St, Lewisville, TX 75067	H1025	n/a	2, 3	Non-Hazardous
Eagle SWS Construction * Environmental Services 817-847-1333	9204 Hwy 287 NW Fort Worth, TX 76131			1	Non-Hazardous
Congress Materials 817-540-3055	11650 Mosier Valley Road, Fort Worth, TX 76040	n/a	n/a	Asphalt, masonry & Concrete	Recycle specific materials
BFI Itasca Landfill 254-621-2511	Republic Wastes 2559 FM 66, Itasca, TX 76055	H0241	TXD988048419	1, 2, 3	Non-Hazardous No Recycling
Skyline Landfill 972-316-2224	Waste Management 1201 N. Central, Ferris, TX 75125	H0042		1 (hydrocarbon impacted soils), 2, 3	Non-hazardous
PSC Recovery Systems 214-637-5575	Phillips Recovery Systems 2131 Progressive Dr, Dallas, TX 75212	MSW 1421	TXD102599339	2 (wastewater, sand-trap wastes, grease trap wastes, oils, etc.)	Hazardous & Non-hazardous

Document Title: CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**Section: 01 74 19**

Name & Phone No.	Affiliation	TX ID	EPA ID	Category	Hazardous/Non-Hazardous
Turkey Creek Landfill 817-790-0311	Progressive Waste Solutions of TX (IESI) 9100 South I-35W Alvarado, TX 76009	1417B		1, 2	Non-hazardous No recycling
Big Cities Crushed Concrete 972-243-5820 Robert	On Airport just off of SW Construction Rd (only pre-approved site)			3	Concrete only
Heritage Crystal Clean (formerly FCC Environmental) 817-304-4578 Judson	2107 Quincy St. Dallas, TX 75212			2, 3	Non-hazardous waste water Recycle: oil, fuels, antifreeze & glycol
Gold Metal Recyclers 214-421-0247	4305 S. Lamar St. Dallas, TX 75215	88645	TXR000079374	3	Metals only and need to be sorted
Green Planet – WBE 972-636-1515 Virginia	6371 Hwy 276W Royse City, TX 75189	88812 A85969	TXR000079479	1, 3	Hazardous wastes, e-wastes, paint, oil, antifreeze, sludge water
IESI Fort Worth C&D Landfill 817-516-7777	4144 Dick Price Rd Fort Worth, TX 76140	1983B		1	Construction & Demolition, brush, tire chips, No liquids or chemicals

PART 1 – GENERAL

1.1 SUMMARY

- A. Utilize the minimum screening and testing criteria described by this section for constituents of concern where contaminants are known, anticipated or encountered.
- B. Specification will include waste characterization, handling and disposal requirements.
- C. Costs associated with the containerizing, storing, transportation and disposal of solid waste, including hazardous, nonhazardous or specially regulated wastes, in solid or liquid form, is the responsibility of the Contractor.
- D. Remove all Contractor generated waste from Airport property for proper disposal.
- E. Analytical samples for "verification" analytical sampling of soils that fail screening requirements as described in the project specific soil management plan are the responsibility of the contractor.

- 1.2 Analytical samples for disposal profiling of DFW Airport generated impacted soil, special wastes, hazardous wastes or universal wastes shall be performed by EAD unless otherwise stated in the contract.

RELATED REQUIREMENTS

- A. Section 01 74 19, Construction Waste Management and Disposal

1.3 REFERENCES

- A. The following is a list of standards which may be referenced in this Section:
- 1. Environmental Protection Agency (EPA), U.S. Code of Federal Regulations (CFR):
 - a. Title 40 Part 260, Hazardous Waste Management System: General
 - b. Title 40 Part 261, Identification and Listing of Hazardous Waste
 - c. Title 40 Part 262, Standards Applicable to Generators of Hazardous Waste
 - 2. EPA Guidance:
 - a. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846
 - 3. Texas Administrative Code (TAC):
 - a. 30, Chapter 335, Industrial Solid Waste and Municipal Hazardous Waste
 - 4. Texas Commission on Environmental Quality (TCEQ):
 - a. RG-22, Guidelines for the Classification and Coding of Industrial and Hazardous Wastes
 - b. Industrial and Hazardous Waste Sampling and Shipping Procedures

c. RG-366/TRRP-13, Review and Reporting of Chemicals of Concern (COC) Concentration Data

1.4 DEFINITIONS

Term/Acronym	Definition
ASTM	American Society for Testing and Materials
CESQG	Conditionally Exempt Small Quantity Generator as defined in 40 CFR 261.5
CFR	Code of Federal Regulations
EAD	DFW Airport Environmental Affairs Department
EPA	Environmental Protection Agency
NELAC	National Environmental Laboratory Accreditation Conference
NVLAP	National Voluntary Laboratory Accreditation Program
OAR	Owner's Authorized Representative
PPM	Parts per million
SWMP	Solid Waste Management Plan
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
Waste-Related Terms	Waste-Related Definitions
Class 1 Waste	Any nonhazardous industrial solid waste or mixture of industrial solid wastes that, because of its concentration, or physical or chemical characteristics, is toxic, corrosive, flammable, a strong sensitizer or irritant; a generator of sudden pressure by decomposition, heat, or other means; or may pose a substantial present or potential danger to human health or the environment when improperly managed, processed, stored, transported, or disposed of or otherwise managed, as further defined in Chapter 30 of Texas Administrative Code (TAC) §335.505
Class 2 Waste	Any individual industrial solid waste or combination of industrial solid wastes that cannot be described as Hazardous, Class 1, or Class 3 as defined in Chapter 30 TAC §335.506
Class 3 Waste	Inert and essentially insoluble industrial solid waste, usually including but not limited to materials such as rock, brick, glass, dirt, and certain plastics and rubber that is not readily decomposable, as further defined in Chapter 30 TAC §335.507
Generator	Entity that produces the waste

Industrial Solid Waste	A solid waste resulting from or incidental to any process of industry or manufacturing, which may include a hazardous waste
Representative Sample	A portion of a substance being tested that can be expected to exhibit the average properties of the whole. More guidance on sampling is available in the TCEQ document, "Industrial and Hazardous Waste Sampling and Shipping Procedures."
Solid Waste	Any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant or air pollution control facility, and other discarded material including solid, liquid, semisolid or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations.

1.5 SUBMITTALS

- A. Waste Management Plan shall be submitted prior to receiving permit approval.
- B. Board Project Process Knowledge Form shall be submitted to EAD within 10 days of generation for each potential hazardous or industrial waste stream.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 WASTE MANAGEMENT PLAN

- A. Provide information on the type of waste, storage method, handling and transportation procedures, disposal location and how the wastes will be handled in accordance with applicable federal, state and local rules and regulations.

3.2 WASTE CLASSIFICATION PROCEDURES

- A. Waste classification is based upon generator knowledge, process knowledge, and analytical data. Depending on the waste stream, one or any combination of the previously mentioned methods may be used for classification purposes. There are five different waste classifications in Texas:
 - 1. Hazardous: Federal classification.
 - 2. Universal: Federal and Texas classification.
 - 3. Class 1 Non-Hazardous: Texas-specific classifications.
 - 4. Class 2 Non-Hazardous: Texas-specific classifications.
 - 5. Class 3 Non-Hazardous: Texas-specific classifications.
- B. A Board Project Process Knowledge Form must be completed and submitted to EAD for each individual waste stream which may be classified as Hazardous, Universal, Class 1 or Class 2 waste. The Board Project Process Knowledge Form shall provide information such as the processes and activities generating

the specific waste stream, potential contaminants, estimated amount of waste to be generated, and additional supporting documentation (MSDS, laboratory analysis, field screening forms). The Board Project Process Knowledge Form shall not be completed for wastes that are Contractor generated wastes, Class 3 Non-Hazardous Waste or CDL materials.

- C. Use TCEQ guidance document RG-22 "Guidelines for the Classification and Coding of Industrial and Hazardous Wastes" to classify waste.
- D. Waste that cannot be classified through process knowledge should be analyzed in compliance with federal, state and local regulations.
 - 1. Perform laboratory analysis to NELAC accredited lab standards using SW-846 or TCEQ TRRP standards for materials not containing asbestos.
 - 2. Perform laboratory analysis for asbestos containing material to National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory standards
- E. Common wastes which should be expected include:
 - 1. Paint and Paint-Related Materials, see 30 TAC §335.262, Standards for Management of Paint and Paint-Related Waste. Paint waste solids from blasting or grinding removal with a Toxicity Characteristic Leaching Procedure (TCLP) test performed for lead and chromium resulting in concentrations of 5.0 mg/L or 5.0 ppm or more are classified as hazardous and are to be considered a "Universal Waste - Paint and Paint Related". Paint waste related liquids from removal processes utilizing water then separated from the solids shall be containerized and considered a waste stream of its own for analysis. Wastes from removal of paints of different colors should be kept separate, if possible, since one color may contain lead or chromium while another color may not.
 - 2. PolyChlorinated Biphenyls (PCBs), which should be handled according to 30 TAC §335.508(5). Wastes contaminated with greater than 500 ppm PCBs are hazardous waste, while wastes containing less than 500 ppm PCBs but more than 50 ppm PCBs are Class 1.
 - 3. Petroleum contaminated materials should be handled in accordance with 30 TAC §335.508(6), which states that materials with a concentration of total petroleum hydrocarbons (TPH) above 1500 ppm are considered Class 1.
 - 4. Petroleum contaminated materials, with TPH concentration less than or equal to 1500 ppm but greater than 20 ppm will be disposed of as a Class 2 waste.

3.3 WASTE MANAGEMENT

- A. Waste will be handled and disposed of as specified in Section 01 74 19, Construction Waste Management and Disposal.
- B. DFW Airport generated wastes requiring characterization analytical sampling shall not leave the airport property until characterization is completed, appropriate

disposal class determined by profiling and, if required, manifests available for transportation.

PART 4 – APPENDIX

- 4.1** The following documents/forms attached following “End of Section” are a part of the Specification.
A. Board Project Process Knowledge Form

- END OF SECTION -

Board Project Process Knowledge Form

This form is to be provided to the Environmental Affairs Department (EAD) when a potential hazardous or industrial waste has been generated for disposal. A separate form must be submitted for each individual waste stream. Once a waste stream is identified and the sampling process has begun, the waste must be secured in a manner to prevent additional contamination that could potentially alter the waste determination. Contractors are responsible for appropriately classifying and disposing of waste generated by materials they bring on site. Construction Debris and Class 3 wastes that are being recycled offsite do not need to be submitted to EAD prior to disposal.

Contractor:	
Project Name:	
Project Location:	
CA #:	
PM:	

Waste (i.e. contaminated soil, purge water):	
Date of Initial Waste Generation:	
Estimated Amount of Waste (50 Yards):	
Description of Process (i.e. ramp construction project):	
Description of Specific Activities Generating Stream (i.e. excavation of east ramp):	
Manufacturer's Information (for all components when applicable):	
Potential Contaminants (i.e. solvents, jet fuel):	
Additional Supporting Documentation (include attachments when applicable, i.e. MSDS, analytical data):	
Waste Determination (i.e. non-hazardous):	
Proposed Disposal Location:	

Name:	
Date:	

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes final cleaning of project.

1.2 PROJECT CONDITIONS

- A. Conduct cleaning and waste disposal operations in full compliance with federal and local environmental and antipollution regulations, ordinances and laws.
 - 1. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm water or sanitary waste disposal systems.
 - 2. Do not burn or bury debris, rubbish or other waste material on the premises.
 - 3. Restore damaged areas to the conditions that existed prior to the start of construction as documented by the Contractor in a photographic record.

PART 2 – PRODUCTS

2.1 CLEANING MATERIALS

- A. Use materials which will not create hazards to health or property, and which will not damage surfaces.
- B. Use only materials and methods recommended by manufacturer of material being cleaned.

PART 3 – EXECUTION

3.1 FINAL CLEANING

- A. General:
 - 1. Clean each surface or unit of Work to the condition expected from a commercial building cleaning and maintenance program using experienced workers or professional cleaners and complying with manufacturer's cleaning instructions.
 - 2. Complete cleaning operations and conduct an examination of all Work areas with Owner and Architect before requesting inspection for Certification of Substantial Completion.
- B. Remove grease, petroleum or chemical spills, mastic, adhesives, dust, dirt, stains, fingerprints, labels, lubricants and other foreign materials from visible interior and exterior surfaces.
- D. Remove temporary protection and labels.
- E. Clean and polish transparent, reflective and glossy surfaces to a clear shine.
- F. Vacuum clean carpet.
- G. Clean resilient and hard-surface floors.
- H. Clean sealed joints.
- I. Clean permanent filters of ventilating equipment and replace disposable filters when units have been operated during construction. Clean ducts, blowers, and coils if units have been operated without filters during construction.

- J. Clean light fixtures, lamps, globes, and reflectors. Replace burned out lamps and defective starters.
- K. Maintain clean condition until date of Beneficial Occupancy.
- N. Remove waste, foreign matter and debris from roofs, gutters, areaways and drainage systems. Flush roof drainage system with water until clear.
- O. Remove waste, debris and surplus materials from Site. Clean grounds; remove stains, spills, and foreign substances from paved areas and sweep clean. Rake clean other exterior surfaces.

- END OF SECTION -

PART 1 – GENERAL

1.1 SCOPE OF WORK

- A. Testing, adjusting and balancing (TAB) of air conditioning systems and related ancillary equipment performed by impartial technical TAB firm selected and employed by Contractor, acceptable to Owner.
- B. Make changes in sheaves, belts and dampers required for correct balance as required by TAB firm.
- C. Provide and coordinate services of qualified, responsible personnel as required to correct, repair or replace deficient items or conditions found during testing, adjusting and balancing phase.
- D. Operate said systems for the length of time necessary to properly verify completion and readiness for TAB.
- E. Provide sufficient time to permit completion of TAB services and remedial work if required prior to Owner occupancy.
- F. Drawings and Specifications indicate valves, dampers, and miscellaneous adjustment devices for obtaining optimum operating conditions. Valves, dampers and adjustment devices are to be installed so they are accessible and readily adjustable. Provide access as requested by TAB firm should device not be readily accessible. Correct malfunctions encountered by TAB personnel and reported to Contractor immediately so balancing work can proceed.
- G. Refer to technical specification for specific HVAC requirements.

1.2 MATERIALS AND WORKMANSHIP

- A. Have building and air-conditioning systems in complete operational readiness for preliminary TAB work to begin prior to Contractor notice of Substantial Completion.
- B. Promptly correct deficiencies of materials and workmanship.
- C. Pay added costs to Owner for failure to have building and air conditioning system ready or failure to correct deficiencies promptly.
- D. Complete operational readiness of building requires that construction status of building permit closing of doors and windows, installation of ceilings, and operation of other building components to obtain projected operating conditions.
- E. Complete operational readiness of air-conditioning systems requires that following be accomplished:
 - 1. Air Distribution Systems:
 - a. Installation verified for conformity to design.
 - b. Supply, return and exhaust ducts terminated and pressure tested for leakage as required by specifications.
 - c. Volume and fire dampers properly located and functional.
 - d. Dampers serving requirements of minimum and maximum outside air provide tight closure and full opening, smooth and free operation.

- e. Supply, return and exhaust grilles, registers, diffusers, and VAV by-pass terminal units installed.
 - f. Air handling systems, units and associated apparatus, such as heating and cooling coils, filter sections, and access doors, blanked or sealed to eliminate excessive by-pass or leakage of air.
 - g. Fans (supply, return and exhaust) operating and verified for heater elements in motor starters of proper size and rating; motor amperage and voltage recorded on each phase at start-up and running, and verified they do not exceed nameplate ratings.
2. Water Circulating Systems:
- a. Check and verify pump alignment and rotation.
 - b. Open valves to full open position, close by-pass through systems components; remove and clean strainers.
 - c. Repeat operation until circulating water is clean.
 - d. Record pump motor amperage on each phase and voltage after reaching rated speed. Record readings for each pump motor.
 - e. Verify readings do not exceed nameplate rating.
 - f. Verify electrical heater elements are of proper size and rating.
 - g. Verify water circulating systems are full and free of air; expansion tanks are set for proper water level; air vents are installed at high points of systems and are operating freely.
 - h. Check and set operating temperatures of heat exchangers to desired requirements.
3. Automatic Controls:
- a. Verify that control components are installed in accordance with project requirements and functional, including electrical interlocks, damper sequences, air and water resets, fire and freeze stats.
 - b. Controlling instruments calibrated and set for designed operating conditions.
 - c. Motor amperages and voltages of each piece of electrically driven air conditioning equipment in system are recorded including exhaust fans showing "factual" and "nameplate" voltage and amperage.
4. Notification of System Readiness:
- a. Notify Owner in writing after completion of work described above, Certify work has been accomplished and building and air conditioning systems are in readiness for preliminary testing, adjusting and balancing. Include a copy of tabulated data.
 - b. Notify TAB firm of readiness for balancing and include copies of Contractor's certification and tabulated voltages and currents upon

approval by Owner, but not longer than five working days from Owner's receipt of Contractor's certification,.

- c. Request inspection be made by representative of Owner, Architect/Engineer, TAB firm, and Contractor when systems are found to be ready.
- d. Inspection shall establish whether or not systems meet basic requirements for TAB services.

1.3 QUALITY ASSURANCE

A. Requirements of TAB Firm

- 1. Firm organized to provide professional TAB services with at least one professional engineer with current Texas license to perform services. Architect/Engineer shall develop project data for test procedures in Specifications.
- 2. Firm shall have operated minimum of two years under current firm name. Submit credentials, certifications, name and experience record to Owner for acceptance prior to commencing TAB work.
- 3. Firm shall be capable of performing service specified at location of facility described within time specified, preparing and submitting detailed report of actual field work performed and following up basic work as may be required.
- 4. Personnel used on project site shall be either professional engineers or engineering technicians, who shall have been permanent, full-time employees of firm for minimum of six months prior to start of work for specific project.

1.4 SUBMITTALS

A. Furnish the following to the TAB firm:

- 1. One complete set of Drawings and all modifications made by Change Order or other documentation.
- 2. Accepted submittal data on equipment installed and related changes as required accomplishing test procedures.

1.5 RESPONSIBILITIES OF TAB FIRM

A. TAB personnel shall check, adjust and balance components of air conditioning system as required achieving optimum noise, temperature, and airflow conditions in conditioned spaces of buildings while equipment of system is operating economically. Accomplish checking, adjusting, and balancing after system components are installed and operating in accordance with Contract Documents.

B. TAB Personnel Liaison and Early Inspection:

- 1. Act as liaison between Owner and Contractor.
- 2. Inspect installation of mechanical piping systems, sheet metal work, temperature controls, and other component parts of heating, air conditioning, and ventilating systems during construction stage and prior to Substantial Completion of building for purpose of reviewing part of work

- related to proper arrangement and adequate provisions for testing and balancing.
- 3. Issue preliminary evaluation in memorandum form to Owner, and Contractor indicating if systems are functional and Substantially Complete.
- 4. Provide summary of preliminary evaluation in chart form listing deficiencies and specifically noting comparisons of design and actual performance.
- 5. Indicate room name, room number and Drawing sheet number in the preliminary evaluation memorandum for reference.
- 6. After completing review during construction stage and prior to Substantial Completion, provide Contractor and Owner with list of sequential steps in performing balance operation.
- 7. Provide test in accordance with 'Basic Procedures as outlined in AABC (Associated Air Balance Council) Standards Manual.
- 8. As balancing progresses, TAB firm may find it necessary to deviate from order in which steps are listed; TAB firm will follow published schedule.
- 9. Advise Contractor in writing of conditions corrected during balancing process, as TAB personnel discover abnormalities and malfunctions of equipment or components.
- 10. Written document shall be understandable and legible.
- 11. TAB report is not to include data from malfunctioning equipment.
- 12. TAB firm shall not instruct or direct Contractor in work, but will make such reports as necessary to Owner's Authorized Representative and Contractor.

C. TAB Report:

- 1. Culminate activities described in report in triplicate to Owner's Authorized Representative.
- 2. Final report is to provide reference of actual operation conditions for Owner's operating personnel.
- 3. Measurements and recorded readings (of air, water, electricity) appearing in reports shall be done on-site by technicians or engineers of TAB firm.
- 4. Include work sheets in final TAB report as supplement.
- 5. Provide report with certification by TAB firm's professional engineer.
- 6. Prepare report on standard forms approved by Owner's Authorized Representative.
- 7. Include following in TAB report as minimum:
 - a. Preface: General discussion of system idiosyncrasies and problems encountered, outline of normal ventilation cycles of operation, noise problem not corrected.
 - b. Pitot Tube Traverse

- 1) Provide records of air velocity and volume in exhaust ducts, main supply ducts, and return ducts as measured by traverse method for use in future troubleshooting by maintenance personnel.,
- 2) Identify locations of traverse test stations in data.
- c. Temperature Tabulation:
 - 1) Record the temperature of conditioned space for each room.
 - 2) Take three successive readings for each room on each of three successive days.
 - 3) Record outside ambient temperature at 2-hour intervals.
- d. Air Volumes and Velocities:
 - 1) Record air volumes and velocities measured at each supply grille, return air grille, and exhaust air grille or air handling device.
 - 2) In fan systems, air quantities indicated in Contract Documents may be varied as required to secure maximum temperature variation of two degrees within each separately controlled space, but total air quantity indicated for each zone must be obtained.
 - 3) It shall be obligation of Contractor to furnish or revise fan drive or motors if necessary to attain air volumes, without additional cost to Owner.
- e. Static Pressure Drops:
 - 1) Record static pressure drops measured across each supply fan, cooling coil, heating coil, air-handling unit filter, and exhaust fan.
 - 2) Relate readings to particular fan curve in terms of Cubic Feet per Minute (CFM) handled.
- f. Water Temperatures:
 - 1) Record temperatures of water entering and leaving coils and heat exchanger under maximum load conditions.
- g. Water Pressure:
 - 1) Record water pressure at gage connections, coils and pumps. Record related coil and pump curves points in terms of Gallons per Minute (GPM) handled. Confirm by flow through flow measuring devices at each air handler.
 - 2) Adjust flow of water through coils by manipulating valves until rated pressure drop across each coil is obtained and total water flow is verified by flow meter readings.
 - 3) Adjust first rated pressure drop through coils in each of several systems on coils with three-way valves, and record

the temperature differential between inlet and outlet.
Compare required rating.

- 4) Adjust by-pass valves on each coil until equal pressure drop between supply and return connections as obtained with three-way valves set to by-pass coils in each of several systems.

- h. Electrical Current and Voltage: Take measurements at drive motor on each piece of equipment.
- i. Fan Speeds: Measure in RPM (Revolutions per Minute).
- j. Instrumentation List: List instruments by type and make used in gathering

D. Drawings:

1. Use zone ducts and supply air openings designations from Drawings on report data sheets so data in report can be correlated with each specific supply air opening in building.
2. Use actual building room numbers if they differ from those on Drawings. Mark correct building room numbers on Drawings.
3. Provide one marked-up set of Drawings with three copies of TAB report.

E. Verification Testing:

1. Owner may require verification of TAB report data in presence of Owner's Authorized Representatives at random checkpoints before final acceptance of TAB report. TAB firm shall provide testing for data verification.
2. Owner shall notify Contractor of acceptance of report after clarification of questions on data recorded.
3. TAB firm shall inspect, adjust, balance, and log data on performance of fans, dampers in duct system, air distribution devices, flows of steam or water through coils and power consumption of data on design and proper application of systemic components and furnish labor and material required to eliminate deficiency.
4. During TAB work, adjust temperature regulation for proper relationship between controlling instruments.
5. Advise Contractor of instruments out of calibration; recalibrate controls using data supplied by balancing firm.
6. After recalibration, take room temperatures as described in Temperature Tabulation in this Section.
7. Make total of three inspections within 90 days after occupancy of building to ensure satisfactory conditions are being maintained throughout and to satisfy unusual conditions.
8. Make additional inspection in building during season opposite in which initial adjustments were made.

9. Make necessary modifications to initial adjustment required to produce optimum operation of systemic components to produce optimum operation of conditions in each conditioned space.
10. At time of opposite season checkout, give Owner and Contractor timely notification before readings or adjustments are made so they may participate in checkout.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

- END OF SECTION -

PART 1 – GENERAL

Not Used.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 PROTECTION OF NEWLY INSTALLED WORK

- A. Protect all installed work until Completion of project using appropriate and effective means.
- B. Restrict construction workers and traffic from completed and protected areas.
- C. Prohibit all unnecessary traffic and storage from surfaces covered by roofing or waterproofing. Provide adequate resilient protection and durable work platforms over all surfaces covered by roofing or waterproofing. Provide clean, smooth plywood or finished wood boards under all ladders, staging, or scaffolding placed on roofing and waterproofing.
- D. Protect all finished surfaces including, but not limited to, door frames, doors, glass, floors, walls, ceilings, soffits, corners, fixtures, furnishings, equipment, and other finished surfaces and work.
 - 1. Provide at least sheet paper or plastic protection. In all locations of frequent traffic and all locations subject to moving objects whether wheeled or not, provide temporary plywood or fiber board walkways. Use only non-marking rubber tired carts, dollies, and wagons. Provide temporary plywood or boards under all materials stored over finished floors.
 - 2. In addition to other acceptance criteria required by the Contract Documents, all finished surface shall be in acceptable condition at time of acceptance by the Owner. Repair or replace all damaged work as needed to achieve this requirement at no additional cost to the Owner.
- D. Effectively protect porous materials including, without limitation, gypsum board, insulation, ceiling tiles and panels, and other fibrous and water-susceptible materials from becoming wet or moisture damaged.
 - 1. Remove and replace work which is water or moisture damaged.
 - 2. Remove and replace work which shows evidence of biological growth, mold, and mildew.

- END OF SECTION -

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Substantial Completion
- B. Final Inspection
- C. Closeout Submittals
- D. Evidence of payments and release of liens
- E. Final Adjustment of Accounts
- F. Final Application for Payment
- G. Additional Adjustment
- H. Post-Construction Examination

1.2 SUBSTANTIAL COMPLETION

- A. When Contractor considers work substantially complete, submit to Owner's Authorized Representative:
 - 1. Written certification that work and/or designated portion thereof, is substantially complete.
 - 2. List of items (punch list) to be completed or corrected, value of incomplete construction and reasons the work is not complete.
- B. Within seven (7) calendar days after receipt of such certificate, Owner's Authorized Representative will make examination to determine status of completion.
- C. If Owner's Authorized Representative determine that work is not substantially complete:
 - 1. Owner's Authorized Representative will promptly notify Contractor in writing, giving reasons.
 - 2. Contractor shall remedy deficiencies in work, and send second written notice of substantial completion to Owner's Authorized Representative.
 - 3. Owner's Authorized Representative will re-examine work.
- D. Upon concurrence that work is substantially complete, the Owner's Authorized Representative will:
 - 1. Prepare Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected, as verified and amended by Owner's Authorized Representative.
 - 2. Submit certificate to Contractor for written acceptance of responsibilities assigned to them in certificate.
- E. After work is substantially complete, Contractor shall:
 - 1. Allow Owner occupancy of project under provisions stated in Certificate of Substantial Completion.

2. Obtain and submits Certificate of Occupancy, operating certificates and similar releases enabling the Owner unrestricted use of the work.
3. Complete work listed for completion or correction within designated form.
4. Advise the Owner's Authorized Representative of pending insurance changeover requirements.
5. Perform final cleaning in accordance with Section 01 74 23 Final Cleaning.

1.3 FINAL INSPECTION

- A. When Contractor considers work is complete, submit written certification that:
 1. Contract Documents have been reviewed.
 2. Work has been examined for compliance and completed in accordance with Contract Documents.
 3. Equipment and systems have been tested in presence of Owner's Authorized Representative and are operational.
 4. Work is completed and ready for final examination.
- B. Owner's Authorized Representative will make examination to verify status of completion within seven calendar days after receipt of such certification.
- C. If Owner's Authorized Representative consider that work is incomplete or defective:
 1. Owner's Authorized Representative will promptly notify Contractor in writing, listing incomplete or defective work.
 2. Contractor shall take immediate steps to remedy stated deficiencies, and send second written certification to Owner's Authorized Representative that work is complete.
 3. Owner's Authorized Representative will re-examine work.
- D. When Owner's Authorized Representative finds that work is acceptable under Contract Documents, the Contractor will be requested to make closeout submittals.

1.4 CLOSEOUT SUBMITTALS

- A. Evidence of compliance with requirements of governing authorities:
 1. Certificate of Occupancy.
 2. Certificates of Inspection: Mechanical and Electrical systems as required by respective sections.
 3. Commissioning test plan, results / report, and corrective actions documentation.
- B. Project Record Documents: Comply with Section 01 78 39 Project Record Documents.

- C. **Operations and Maintenance Data:** Comply with Section 01 78 23 Operation & Maintenance Data.
- D. **Spare Parts and Maintenance Materials:**
 - 1. Provide products, spare parts, and maintenance materials in quantities specified in each specification section in addition to that required for completion of work.
 - 2. Coordinate with Owner, deliver to Project site, store properly, and obtain receipt prior to final payment.

1.5 EVIDENCE OF PAYMENTS AND RELEASE OF LIENS

- A. **Contractor's Affidavit of Payment of Debts and Claims**
- B. **Contractor's Affidavit of Release of Liens**
- C. **Attachment to Contractor's Affidavit of Release of Liens:**
 - 1. Consent of Surety to Final Payment
 - 2. Contractor's Release or Waiver of Liens
 - 3. Separate releases of waivers of liens from subcontractors, suppliers and others with lien rights against property of Owner, together with list of those parties.
- D. **Submittals shall be duly executed before delivery to Owner's Authorized Representative.**

1.6 FINAL ADJUSTMENT OF ACCOUNTS

- A. **Submit final statement of accounting to Owner's Authorized Representative.**
- B. **Statement shall reflect adjustments to Contract Sum:**
 - 1. **Original Contract Sum**
 - 2. **Additions and deductions resulting from:**
 - a. **Previous Change Orders**
 - b. **Allowances**
 - c. **Unit Prices**
 - d. **Deductions for uncorrected Work**
 - e. **Penalties and Bonuses**
 - f. **Deductions for liquidated damages**
 - g. **Other adjustments**
 - 3. **Total Contract Sum, as adjusted**
 - 4. **Previous payments**
 - 5. **Sum remaining due**

- C. Owner's Authorized Representative will prepare final change order, reflecting approved adjustments to Contract Sum, which were not previously made by change orders.

1.7 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit final Application for Payment in accordance with procedures and requirements stated in Conditions of the Contract.

1.8 ADDITIONAL ADJUSTMENT

- A. No adjustments to contract requested by Contractor will be allowed if asserted after execution of Final Payment of Contract.

1.9 POST-CONSTRUCTION EXAMINATION

- A. Prior to expiration of one year from Date of Substantial Completion, Owner's Authorized Representative will make visual examination of project in company of Contractor to determine whether further correction of work is required in accordance with provisions of contract.
- B. Owner's Authorized Representative will promptly notify Contractor, in writing, of any observed deficiencies.
- C. Contractor will contact Owner's Authorized Representative to arrange time and establish schedule for correction of deficiencies.

PART 2 – PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

– END OF SECTION –

PART 1 – GENERAL

1.1 SUMMARY

- A. Provide operation and maintenance manuals for all new operating equipment and systems furnished by the Contractor, and all materials and finishes as noted in specific specification sections.

1.2 O&M, COMMISSIONING, TRAINING and WARRANTY SUBMITTALS

A. Delivery Method

1. Hardbound, submit two (2) copies of preliminary draft of the complete manual; or,
 2. Electronically, notify the OAR, through the appropriate methodology (Unifier), that an electronic submittal has been uploaded and is ready for review and comment.
 3. If any content will not upload into the Unifier system, deliver electronic material to the OAR in the form of a DVD in digital PDF format, for review and comment.
 4. The Owner's Authorized Representative will review the draft and return one (1) hardbound copy, or electronically through the Unifier system, with submittal comments.
 5. Upon successful completion of all O&M or Warranty manual edits, the OAR will advise and the final accepted version will be uploaded into the Unifier database, in the proper destination folder. An approved O&M hardbound copy will be published in its complete form and delivered with a transmittal to the OAR.
 6. Delivery Quantity- All contractors will upload all approved Project Record documents into the appropriate folder in the Unifier system. This includes, but is not limited to, O&M, Warranty, Project Record Drawings, and Training DVD's. In addition, one (1) hardbound copy and three (3) DVD copies of all finalized and approved O&M, Warranty, Project Record Drawings and two (2) Training DVDs are required to be delivered to the OAR.
- B. Provide final O&M manuals for all equipment that is to be placed into service and operated by the Owner prior to final acceptance.
 - C. Utilizing the Owner provided data collection spreadsheet(s), complete the New Equipment/Asset Inventory Form, the New Equipment/Asset Preventive Maintenance Task and Schedule Form, the Equipment Warranty Information Form, and/or the Equipment De-commissioning Checklist as determined by Owner representatives. <https://www.dfwairport.com/development/index.php> - ETAM Equipment Asset Information EAM Forms.
 - D. If stated in the individual delivery order, produce and deliver a professional quality video DVD recording for each training / instruction session. DVD will be shot and produced by experienced videographers. DVD's of inadequate quality will be remade at Contractor's expense. OAR approved DVD's will be uploaded

into the Unifier database in the appropriate location folder by the contractor. If the upload is not successful, see 1.2, A, 3.

E. FORMAT of ELECTRONIC SUBMITTAL – O&M AND WARRANTY

1. Upload all O&M or WARRANTY data in digital PDF format in the Unifier System in the correct location. If the upload is not successful, see 1.2, A, 3. The Table Of Contents directory will be Hyper-linked to the corresponding O&M, shop drawing, and warranty chapters for expedited access. All digital PDF material is to be formatted for Optical Character Recognition (OCR).

F. FORMAT of HARDBOUND SUBMITTAL – O&M AND WARRANTY

1. Prepare hard-copy data in the form of an instructional manual
2. Binders: Commercial quality, 8-1/2 x 11 inch, 3 (3") inch ring binders with hardback, cleanable, plastic covers. Binder assembly will not exceed 75% of Binder capacity. If multiple binders are required for a complete series, correlate O&M data into related consistent groupings.
3. Binder and DVD cover preparation: Identify each binder with typed or printed title "Operation And Maintenance Instructions"; or "Warranty" list title and location of Project; DFW Airport Contract and Permit numbers, identify subject matter of contents. Identify each Volume 'X of Y' where it is the Xth volume of Y total volumes in each O&M set for the project; Identify each volume as being in 'Set A of B' where the volume is part of the Ath set of B total final O&M Manual sets provided for the project. Spine: Insert filler Tab that contains the Contract Name, "Operation and Maintenance Instructions", or "Warranty" title line, and the Contract and Permit Number. DVD Labels are to be the adhesive type, professionally printed and contain same project information relative to the project.
4. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.
5. Provide tabbed flyleaf for each separate product and system, with typed description of product and major component parts of equipment.
6. Text: Manufacturer's original printed data. No second generation print will be accepted.
7. Shop Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

1.3 QUALITY ASSURANCE

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

1.4 NEWLY PREPARED DRAWINGS

- A. Newly Prepared Record Drawings: Prepare new drawings instead of following procedures specified for preparation of Record Drawings where new drawings are required by a Change Order issued as a result of acceptance of an alternate, substitution, or other modification and the Architect/Engineer determines that neither the original Contract Drawings nor the shop Drawings are suitable to show the actual installation.

1. Consult the OAR for the proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction.
2. When completing newly prepared Drawings, utilize the procedures specified for organizing, copying, binding and submittal of Record Drawings. All drawings will include the required DFW "project record" stamp and professional seals, contract and permit numbers, and printed name and signature of the authorized contracted individual.
3. All final Project record Drawings will be built from the finalized project CAD files, and assembled in a digital PDF format. NO handwritten comments will be accepted on finalized Record Drawings in PDF format. All comments, lines, shapes, etc., will be incorporated into the CAD set prior to the assembly of the final PDF Record Drawings. Both CAD and PDF files are to be copied to a DVD and delivered to the OAR, with appropriate project information on label.

1.6 MANUAL FOR MATERIALS AND FINISHES

- A. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designation. Provide information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture-protection and Weather-exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional Requirements: As specified in individual Specifications sections.
- E. Provide a listing in Table of Contents for design data, with tabbed flysheet and space for insertion of data.

1.7 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Each item of Equipment and Each System: Include description of unit or system, and component parts. Give function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- B. Panel board Circuit Directories: Provide electrical service characteristics, controls, and communications.
- C. Include as-installed color-coded wiring diagrams.
- D. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and any special operating instructions.
- E. Maintenance Requirements: Include routine procedures and guide for trouble-shooting; disassembly, repair, re-assembly instructions; and alignment, adjusting, balancing, and checking instructions.

- F. Provide servicing and lubrication schedule, and list of lubricants required.
- G. Include manufacturer's printed operation and maintenance instructions.
- H. Include sequence of operation by controls manufacturer.
- I. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- J. Provide "as-installed" control diagrams by controls manufacturer.
- K. Provide Contractor's coordination drawings, with "as-installed" color-coded piping diagrams.
- L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- M. Provide list of original manufacturer's spare parts, and recommended quantities to be maintained in storage for a 12-month period for OAR review and approval. Spare parts list shall contain the following information:
 - 1. Parts Descriptions.
 - 2. Manufacturer's Part Number.
 - 3. Shelf Life.
 - 4. Recommended Quantity.
 - 5. Unit Price.
 - 6. Name and address of the part manufacturer.
 - 7. Name and address of a local supplier for the part.
- N. As applicable, include test and balancing reports, manufacturer factory test reports and certifications, system commissioning and operation testing reports, system start-up reports, and system maintenance reports prior to turn over.
- O. Additional Requirements: As specified in individual Specification sections.
- P. Provide a listing in Table of Contents for design data, with tabbed flysheet and space for insertion of data.

PART 2 – Products

2.1 CONTENTS, EACH VOLUME

- Table of Contents: Provide title of Project; names, addresses and telephone numbers of Owner's Authorized Representative and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.
- Q. For Each Product or System: List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- R. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.

- S. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- T. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
- U. Warranties: Bind/Insert copy at the end of each applicable section.

PART 3 – EXECUTION

Not Used.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes: General administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.
1. Compile specified warranties and bonds.
 2. Compile specified service and maintenance contracts.
 3. Co-execute submittals when so specified.
 4. Review submittals to verify compliance with Contract Documents.
 5. Submit to Owner's Authorized Representative for review.

1.2 DEFINITIONS

- A. Standard Product Warranties: Reprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
- B. Special Warranties: Written warranties required by the Contract Documents, either to extend time limits provided by standard product warranties or to provide greater rights for the Owner.
- C. Emergency Repairs: Owner reserves right to make emergency repairs as required to keep equipment or materials in operation or to prevent damage to persons or property without voiding Contractor's warranty or bond, or relieving Contractor of its responsibilities during contract, warranty or bond periods.

1.3 WARRANTY REQUIREMENTS

- A. Related damages and losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
- B. Reinstatement of warranty: When Work covered by a warranty by written endorsement.
1. Reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation but not less than 50% of the original warranty period of time.
- C. Replacement cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents.
- Cost of replacing or rebuilding defective Work during the warranty period, regardless of whether the Owner has benefited from use of the Work, is the Contractor's responsibility.
- D. Upon contact from Owner requesting repair work covered by warranty, provide on-site response by repair team no later than twenty-four (24) hours from time of initial contact.

1.4 SUBMITTAL REQUIREMENTS

- A. Assemble warranties, bonds, service contracts and maintenance contracts, executed by each of respective manufacturers, suppliers, and subcontractors.
- B. Place all documents for each product in a separate tabbed section in the binder. Provide a table of contents listing each section in the binder.
- C. Provide complete information for each item at the front of each section summarizing the following detail for each warranty section:
 - 1. Product or work item name.
 - 2. Firm responsible for the warranty, with name of principal, address and telephone number.
 - 3. Scope of the warranty.
 - 4. Date of beginning of each warranty, bond or service and maintenance contract will be established by the date of Final Acceptance as defined by OAR.
 - 5. Duration of warranty, bond or service maintenance contract.
 - 6. Provide proper procedure to follow in the event of a warranty failure and include descriptions of conditions of operation or maintenance which might affect validity of warranty or bond.
 - 7. Contractor, name of responsible principal, address and telephone number.
- D. Provide two original signed copies of each warranty requiring a signature or other authentication.
- E. Provide completed Excel spreadsheet of Equipment Warranty Information. <https://www.dfairport.com/development/index.php> - ETAM Equipment Asset Information EAM Forms.

1.5 FORM OF SUBMITTALS

- A. Format:
 - 1. Size 8-½" x 11", punch sheets for standard 3-ring binder.
 - 2. Fold larger sheets to fit into binders.
 - 3. Cover: Identify each packet with typed or printed title "Bonds and Warranties".
 - 4. List:
 - a. Title of Project.
 - b. Name of Contractor.
- B. Binders: Commercial quality, 3-ring and no larger than three (3") inch, with durable and cleanable plastic covers.

1.6 TIME OF SUBMITTALS

- A. Submit draft warranties along with Shop Drawings. Provide signed warranties or a letter of intent indicating that the draft warranty provided with the shop drawing will be provided with final warranty document provide at Final Completion.
- B. Submit warranties to Owner's Authorized Representative due at Final Completion.
 - 1. When a designated portion of the Work is completed and occupied or used by the Owner, submit properly executed warranties to Owner's Authorized Representative within fifteen days of completion of that designated portion of the Work.
 - 2. For items of work, where acceptance is delayed materially beyond Date of Substantial Completion, provide updated submittal within ten (10)days after acceptance, listing date of acceptance as start of warranty period.

1.7 SUBMITTALS REQUIRED

- A. Submit warranties, bonds, service contracts and maintenance contracts as specified in each respective Specification Section.
- B. Refer to each individual Section of Project Manual for specific warranty and bond submittal requirements.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

- END OF SECTION -

PART 1 – GENERAL

1.1 CLOSEOUT SUBMITTALS

- A. Deliver record documents to the Owner's Authorized Representative at contract closeout. These records will be combined with the files from the Program Management Computer System and Central Document Files to make a complete history of the design and construction of the individual Project.
- B. Record Document Finish Manual: This is required for items requiring submittal for color, texture or finish selection. Finish manual shall be of "book" style with pages suited for mounting material samples.
- C. Accompany submittal with transmittal letter in duplicate, containing:
 - 1. Date
 - 2. Project title and number
 - 3. Contractor's name and address
 - 4. Title and number of each record document
 - 5. Signature of Contractor or his authorized representative

PART 2 PRODUCTS

2.1 MARKING DEVICES

- A. Provide felt-tip marking pens for recording information in the color code designated by Owner's Authorized Representative at the Pre-Construction Meeting.

2.2 DRAFTING SERVICES

- A. Retain competent drafting services, as necessary, for transfer of "mark up notations" from information recorded during construction.

PART 3 EXECUTION

3.1 RECORD DOCUMENTS

- A. The Contractor shall maintain at the site one marked-up record copy of:
 - 1. Drawings
 - 2. Specifications
 - 3. Addenda
 - 4. Change Orders and Other Modifications to the Contract
 - 5. Owner's Authorized Representative Written Instructions
 - 6. Approved Shop Drawings, Product Data and Samples
 - 7. Field Test Records, to include Commissioning Plan and Test Results and Final Report.
 - 8. Construction Photographs

3.2 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Store documents in Contractor's field office apart from documents used for construction.

1. Provide files and racks for storage of documents.
2. Provide secure storage space for storage of samples.
- B. File documents and samples in accordance with the Owner's file plan.
- C. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
- D. Make documents and samples available at all times for inspection by Owner's Authorized Representative.
- E. Incomplete or out of order documents and samples will be grounds for not approving application for payment.

3.3 RECORDING

- A. Label each document "PROJECT RECORD", in neat large printed letters.
- B. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.
- C. Drawings: Legibly mark to record actual construction:
 1. Depths of various elements of foundation in relation to finish first floor datum.
 2. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 3. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
 4. Field changes of dimension and detail.
 5. Changes made by Field Order or by Change Order.
 6. Details not on original contract Drawings.
 7. Revisions to details shown on Drawings.
 8. Revisions to electrical circuitry.
 9. Actual equipment locations.
 10. Duct size and routing.
 11. References to related shop drawings and modifications.
 12. Note construction change directive numbers, alternate numbers, Change Order numbers and similar identification.
- D. Provide permanent record drawings on a medium as directed by the Project Manager. Reproductions made from Architect/Engineer's original Drawings shall be made available to commercial reprographics service at appropriate time.
 1. Drawings will be completed utilizing "Microstation" software.
 2. Organize prints, and original marked-up set of prints into sets and place sets in tube-type Drawing containers with project identification on end caps.
- E. Post changes and modifications to the Documents as they occur. Owner will periodically review record documents to assure compliance.

- F. Specifications and addenda: Legibly mark each section to record:
1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
 2. Changes made by Field Order or by Change Order or RFI.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes: Administrative and procedural requirements for stocking of extra material.

1.2 PRODUCTS REQUIRED

- A. Provide quantities of extra materials specified in individual specification sections to Owner.
- B. Provide products to be identical to those installed in Work. Include quantities in original purchase from supplier or manufacturer to avoid variations in manufacture.
- C. Provide a complete list, including specification or drawing references, of all extra materials to be provided under this contract within 90 days of Notice of Proceed. Submit list to Owner's Authorized representative in both hardcopy and electronic file in Microsoft Excel.

1.3 STORAGE AND MAINTENANCE

- A. Temporarily store extra materials with products to be installed in Work, under provision of Section 01 66 00, Product Storage and Handling Requirements, or in other location acceptable to Owner's Authorized Representative.
- B. When adequate, secure storage facilities are available at Site, capable of maintaining conditions required for storage and not required for Contract Work or storage; extra materials may be stored in available space.
- C. Maintain extra materials in manufacturer's unopened original containers with labels intact and legible, until delivery to Owner's Authorized Representative.

1.4 DELIVERY

- A. Coordinate final delivery of extra materials with Owner's Authorized Representative prior to Substantial Completion.
- B. Deliver, unload, store, and account for specified quantities of extra materials in presence of Owner's Authorized Representative.
- C. Owner will indicate final placement in building of extra materials.
- D. Obtain written acceptance from Owner's Authorized Representative of receipt of specified quantities of extra materials.
- E. For portions of Work accepted and occupied by Owner prior to Substantial Completion, deliver proportional quantity of spare parts and maintenance materials if requested by Owner's Authorized Representative. Record quantities delivered with Owner's Authorized Representative.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

- END OF SECTION -

PART 1 – GENERAL

1.1 SUMMARY

- A. Instruction and demonstration of operation of each system to Owner's Authorized Representatives.
- B. Amount of time to be devoted to instructional sessions shall be reasonable and consistent with size and complexity of equipment.

1.2 RELATED REQUIREMENTS

- A. Section 01 78 23 – Operation and Maintenance Data

1.3 SUBMITTALS

- A. A minimum of ten (10) days before scheduled date of instruction, submit proposed outline for each instruction session to Owner's Authorized Representative for approval. Indicate list of topics to be covered and identify training and visual aids, which will be used.
- B. If stated in individual delivery order, produce a professional quality video recording on DVD for each instruction session. Recordings will be produced by experienced videographers. One original copy of the video will be submitted to the Owner's Authorized Representative for approval. Recordings of unacceptable quality will be remade at Contractor's expense.
- C. Submit complete record of instructions as part of Operations and Maintenance Data given to Owner. For each instructional period, supply following data:
 - 1. Date.
 - 2. System or equipment involved.
 - 3. Names of persons giving instructions.
 - 4. Other persons present.

1.4 QUALITY ASSURANCE

- A. Arrange for services of qualified manufacturer's representatives who are knowledgeable about the Project to instruct Owner's personnel on proper maintenance, operation and calibration of equipment.

PART 2 – PRODUCTS

1.2 INSTRUCTION PROGRAM

- A. Operating and maintenance manual shall constitute basis of instruction. Review contents of manual with personnel in full detail to explain all aspects of operations and maintenance including but not limited to start-up, daily operation, control adjustment, trouble-shooting, servicing, and maintenance and shut-down of each item of equipment.
 - 1. Prepare and insert additional data in Operation and Maintenance Manual when it becomes apparent during instruction that it is needed.

PART 3 – EXECUTION

1.3 INSTRUCTION OF OWNER'S PERSONNEL

- A. Prior to date of final inspection or acceptance, instruct Owner's designated operating and maintenance personnel in operation, adjustment and maintenance of products, equipment, and systems at agreed upon times. For equipment requiring seasonal operation, perform instructions for other seasons within six (6) months.
- B. For equipment or systems requiring seasonal operation, return at first change of season for changeover from air conditioning to heating, or from heating to air-conditioning.

- END OF SECTION -

PART – 1 GENERAL

1.1 SUMMARY

- A. This Section includes general requirements and procedures for compliance with DFW Green Building Standards (GBS) prerequisites and credits needed for the Project to comply with DFW TDP Sustainability Report.
 - 1. Other GBS prerequisites and credits needed to obtain GBS certification are dependent on material selections and may not be specifically identified as GBS requirements. Compliance with requirements needed to obtain GBS prerequisites and credits may be used as one criterion to evaluate substitution requests.
 - 2. Additional GBS prerequisites and credits needed to obtain the indicated GBS certification are dependent on the Architect's design and other aspects of the Project that are not part of the Work of the Contract.
 - 3. A copy of the GBS Project checklist is attached at the end of this Section for information only.

1.2 REFERENCES

- A. DFW Green Building Standards (GBS) (02.01.10)
- B. DFW Terminal Development Program Sustainability Report

1.3 DEFINITIONS

- A. **Rapidly Renewable Materials:** Materials made from agricultural products that are typically harvested within a ten-year or shorter cycle. Rapidly renewable materials include products made from bamboo, cotton, flax, jute, straw, sunflower seed hulls, vegetable oils, or wool.
- B. **Regionally Manufactured Materials:** Materials that are manufactured within a radius of 500 miles from the Project location. Manufacturing refers to the final assembly of components into the building product that is installed at the Project site.
- C. **Regionally Extracted, Harvested, or Recovered Materials:** Materials that are extracted, harvested, or recovered and manufactured within a radius of 500 miles from the Project site.
- D. **Recycled Content:** The percentage by weight of constituents that have been recovered or otherwise diverted from the solid waste stream, either during the manufacturing process (pre-consumer), or after consumer use (post-consumer.)
 - 1. Spills and scraps from the original manufacturing process that are combined with other constituents after a minimal amount of reprocessing for use in further production of the same product are not recycled materials.
 - 2. Discarded materials from one manufacturing process that are used as constituents in another manufacturing process are pre-consumer recycled materials.

1.4 SUBMITTALS

- A. General: Submit additional GBS submittal requirements included in other sections of the Specifications.
- B. GBS submittals are in addition to other submittals. If submitted item is identical to that submitted to comply with other requirements, submit duplicate copies as a separate submittal to verify compliance with indicated GBS and DFW Sustainability Report requirements.
- C. Sustainability Action Plans: Provide preliminary submittals within 14 days of date established for the Notice to Proceed indicating how the following requirements will be met.
 - 1. Credit MR 1.1, 1.2, and 1.3: Building Reuse- Maintain Existing Walls, Floors, and Roof.
 - 2. Credit MR 1.4: Building Reuse- Maintain 50% of Interior Non-Structural Partitions
 - 3. Credit MR 2.1 and 2.2: Waste management plan complying with Section 01 74 19, Construction Waste Management and Disposal.
 - 4. Credit MR 4.1 and 4.2: List of proposed materials with recycled content.
 - a. Indicate cost, post-consumer recycled content, and pre-consumer recycled content for each product having recycled content.
 - 5. Credit MR 5.1 and 5.2: List of proposed regionally manufactured materials and regionally extracted, harvested, or recovered materials.
 - a. Identify each regionally manufactured material, its source, and cost.
 - b. Identify each regionally extracted, harvested or recovered material, its source, and cost.
 - 6. Credit EQ 3.1 and EQ 3.2: Construction indoor air quality management plan.
- D. Sustainable Progress Reports: Concurrent with each Application for Payment, submit reports comparing actual construction and purchasing activities with Sustainability action plans for the following:
 - 1. Credit MR 1.1, 1.2, and 1.3: Building Reuse- Maintain Existing Walls, Floors, and Roof.
 - 2. Credit MR 1.4: Building Reuse- Maintain 50% of Interior Non-Structural Partitions
 - 3. Credit MR 2.1 and 2.2: Waste reduction progress reports complying with Section 01 74 19, Construction Waste Management and Disposal.
 - 4. Credit MR 4.1 and 4.2: Recycled content.
 - 5. Credit MR 5.1 and 5.2: Regionally manufactured materials and regionally extracted, harvested, or recovered materials.
- E. Sustainability Documentation Submittals:

1. Credit SS 8.0: Product Data for interior and exterior lighting fixtures that stop direct-beam illumination from leaving the building site.
2. Credit WE 3.1 and 3.2: Product Data for plumbing fixtures indicating water consumption.
3. Prerequisite EA 3.0: Product Data for new HVAC equipment indicating absence of CFC refrigerants.
4. Credit EA 4.0: Product Data for new HVAC equipment indicating absence of HCFC refrigerants, and for clean-agent fire-extinguishing systems indicating absence of HCFC and Halon.
5. Credit MR 2.1 and 2.2: Comply with Section 01 74 19, Construction Waste Management and Disposal and DFW Sustainability Report.
6. Credit MR 4.1 and 4.2: Product Data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content. Include statement indicating costs for each product having recycled content.
7. Credit MR 5.1 and 5.2: Product Data indicating location of material manufacturer for regionally manufactured materials.
 - a. Include statement indicating cost and distance from manufacturer to Project for each regionally manufactured material.
 - b. Include statement indicating cost and distance from point of extraction, harvest, or recovery to Project for each raw material used in regionally manufactured materials.
8. Credit EQ 1.0: Product Data and Shop Drawings for carbon dioxide monitoring system.
9. Credit EQ 3.1:
 - a. Construction indoor air quality management plan.
 - b. Product Data for temporary filtration media.
 - c. Product Data for filtration media used during occupancy.
 - d. Construction Documentation: Six photographs at three different occasions during construction along with a brief description of the SMACNA approach employed, documenting implementation of the IAQ management measures, such as protection of ducts and on-site stored or installed absorptive materials.
10. Credit EQ 3.2:
 - a. Signed statement describing the building air flush-out procedures including the dates when flush-out was begun and completed and statement that filtration media was replaced after flush-out.
 - b. Product Data for filtration media used during flush-out and during occupancy.

- c. Report from testing and inspecting agency indicating results of IAQ testing and documentation showing conformance with IAQ testing procedures and requirements.
- 11. Credit EQ 4.1: Product Data for adhesives and sealants used on the interior of the building indicating VOC content of each product used. Indicate VOC content in g/L calculated according to 40 CFR 59, Subpart D (EPA method 24).
- 12. Credit EQ 4.2: Product Data for paints and coatings used on the interior of the building indicating chemical composition and VOC content of each product used. Indicate VOC content in g/L calculated according to 40 CFR 59, Subpart D (EPA method 24).
- 13. Credit EQ 4.3: Product Data for carpet products indicating VOC content of each product used.
- 14. Credit EQ 7: Product Data and Shop Drawings for sensors and control system used to monitor and control room temperature and humidity.

PART – 2 PRODUCTS

2.1 RECYCLED CONTENT OF MATERIALS

- A. Credit MR 4.1: Provide building materials with recycled content such that post-consumer recycled content constitutes a minimum of five percent of the cost of materials used for the Project or such that post-consumer recycled content plus one-half of pre-consumer recycled content constitutes a minimum of 10 percent of the cost of materials used for the Project.
- B. Credits MR 4.1 and MR 4.2: Provide building materials with recycled content such that post-consumer recycled content constitutes a minimum of 10 percent of the cost of materials used for the Project or such that post-consumer recycled content plus one-half of pre-consumer recycled content constitutes a minimum of 20 percent of the cost of materials used for the Project.
 - 1. The cost of post-consumer recycled content of an item shall be determined by dividing the weight of post-consumer recycled content in the item by the total weight of the item and multiplying by the cost of the item.
 - 2. The cost of post consumer recycled content plus one-half of pre-consumer recycled content of an item shall be determined by dividing the weight of post-consumer recycled content plus one-half of pre-consumer recycled content in the item by the total weight of the item and multiplying by the cost of the item.
 - 3. Do not include mechanical and electrical components in the calculation.
 - 4. Recycled content of materials shall be defined according to the Federal Trade Commission's "Guide for the Use of Environmental Marketing Claims," 16 CFR 260.7 (e).

2.2 REGIONAL MATERIALS

- A. Credit MR 5.1: Provide minimum 20 percent of building materials (by cost) that are regionally manufactured materials.

- B. Credit MR 5.2: Of the regionally manufactured materials required by Paragraph "Credit MR 5.1" above, provide at least 50 percent (by cost) that are regionally extracted, harvested, or recovered materials.

2.3 LOW-EMITTING MATERIALS

- A. Credit EQ 4.1: For interior applications use adhesives and sealants that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA method 24):
1. Wood Glues: 30 g/L.
 2. Metal to Metal Adhesives: 30 g/L.
 3. Adhesives for Porous Materials (Except Wood): 50 g/L.
 4. Subfloor Adhesives: 50 g/L.
 5. Plastic Foam Adhesives: 50 g/L.
 6. Carpet Adhesives: 50 g/L.
 7. Carpet Pad Adhesives: 50 g/L.
 8. VCT and Asphalt Tile Adhesives: 50 g/L.
 9. Cove Base Adhesives: 50 g/L.
 10. Gypsum Board and Panel Adhesives: 50 g/L.
 11. Rubber Floor Adhesives: 60 g/L.
 12. Ceramic Tile Adhesives: 65 g/L.
 13. Multipurpose Construction Adhesives: 70 g/L.
 14. Fiberglass Adhesives: 80 g/L.
 15. Structural Glazing Adhesives: 100 g/L.
 16. Wood Flooring Adhesive: 100 g/L.
 17. Contact Adhesive: 250 g/L.
 18. Plastic Cement Welding Compounds: 350 g/L.
 19. ABS Welding Compounds: 400 g/L.
 20. CPVC Welding Compounds: 490 g/L.
 21. PVC Welding Compounds: 510 g/L.
 22. Adhesive Primer for Plastic: 650 g/L.
 23. Sealants: 250 g/L.
 24. Sealant Primers for Nonporous Substrates: 250 g/L.
 25. Sealant Primers for Porous Substrates: 775 g/L.
- B. Credit EQ 4.2: For interior applications use paints and coatings that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA method 24) and the following chemical restrictions:
1. Flat Paints and Coatings: VOC not more than 50 g/L.

2. Non-Flat Paints and Coatings: VOC not more than 150 g/L.
3. Anti-Corrosive Coatings: VOC not more than 250 g/L.
4. Varnishes and Sanding Sealers: VOC not more than 350 g/L.
5. Stains: VOC not more than 250 g/L.
6. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
7. Restricted Components: Paints and coatings shall not contain any of the following:
 - a. Acrolein.
 - b. Acrylonitrile.
 - c. Antimony.
 - d. Benzene.
 - e. Butyl benzyl phthalate.
 - f. Cadmium.
 - g. Di (2-ethylhexyl) phthalate.
 - h. Di-n-butyl phthalate.
 - i. Di-n-octyl phthalate.
 - j. 1,2-dichlorobenzene.
 - k. Diethyl phthalate.
 - l. Dimethyl phthalate.
 - m. Ethylbenzene.
 - n. Formaldehyde.
 - o. Hexavalent chromium.
 - p. Isophorone.
 - q. Lead.
 - r. Mercury.
 - s. Methyl ethyl ketone.
 - t. Methyl isobutyl ketone.
 - u. Methylene chloride.
 - v. Naphthalene.
 - w. Toluene (methylbenzene).
 - x. 1,1,1-trichloroethane.
 - y. Vinyl chloride.

PART – 3 EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT

- A. Credit MR 2.1 and 2.2: Comply with Section 01 74 19, Construction Waste Management and Disposal.

3.2 CONSTRUCTION INDOOR AIR QUALITY MANAGEMENT

- A. Credit EQ 3.1: Comply with SMACNA IAQ Guideline for Occupied Buildings under Construction.

Coordinate subparagraph below with Division 1 Section "Temporary Facilities and Controls." Identify air handlers and associated return-air inlets authorized by Owner for use during construction period.

1. If Owner authorizes the use of permanent heating, cooling, and ventilating systems during construction period as specified in Section 01 50 00, Temporary Facilities and Controls, install filter media having a MERV 8 according to ASHRAE 52.2 at each return-air inlet for the air-handling system used during construction.

Retain first option in subparagraph below if building air flush-out is not required.

2. Replace all air filters immediately prior to occupancy. Replacement air filters shall have a MERV 13 according to ASHRAE 52.2.

- B. Credit EQ 3.2:

Many air-handling units are not capable of 100-percent outdoor air. Only "make-up-air units" and "replacement-air units" and those units specified with economizer cycles have duct connections to allow for 100-percent outdoor air. Units with economizer cycles may not have capacity to do building air flush-out during other than moderate outdoor-air temperature and humidity conditions. This may limit the time when building air flush-out can be performed and, because of limitations in duct connections, it may not be possible to perform a building air flush-out in some or all of the building. Temporary provisions must be required to relieve or exhaust outdoor air introduced during building air flush-out. Verify that equipment receiving MERV 13 air filters can support associated static pressures before retaining paragraph below. MERV 13 air filters may have higher static pressures than originally designed for air handlers.

1. Engage an independent testing and inspecting agency to conduct a baseline indoor air quality testing program according to EPA Protocol for Environmental Requirements, Baseline IAQ and Materials.

- END OF SECTION -

PART 1 – GENERAL

1.1. SUMMARY

- A. Section includes the following:**
 - 1. Start up and testing of equipment and systems.
 - 2. Identification and documentation of equipment and system deficiencies and failures.
 - 3. Corrective actions and acceptance of corrected equipment and systems.
 - 4. Coordination of Commissioning requirements.
- B. Related Division 1 Sections:**
 - 1. Section 01 33 23, Shop Drawings, Product Data, and Samples
 - 2. Section 01 45 16.13, Contractor Quality Control
 - 3. Section 01 78 23, Operation and Maintenance Data
 - 4. Section 01 78 33 - 36, Bonds and Warranties
 - 5. Section 01 78 39, Project Record Documents
 - 6. Section 01 79 00, Demonstration and Training

1.2 DESCRIPTION

- A. Equipment/systems to be commissioned will be listed in detail in the Specifications listed below, when applicable with the Project's Scope of Work:**
 - 1. Division 11 – Equipment
 - 2. Division 13 – Special Construction
 - 3. Division 23 – Heating, Ventilating, and Air Conditioning
 - 4. Division 26 – Electrical
 - 5. Division 27 – Communications

1.3 DEFINITIONS

- A. Commissioning:** Commissioning is a systematic process of ensuring that all building systems perform interactively according to the design intent and the Owner's operational needs. Commissioning during the construction phase is intended to achieve the following specific objectives according to the Contract Documents.
 - 1. Verify that applicable equipment and systems are installed according to the contract requirements, manufacturer's recommendations and to industry accepted minimum standards and that they receive adequate operational checkout by installing contractors.
 - 2. Verify and document proper performance of equipment and systems.
 - 3. Verify that O&M documentation is complete.
 - 4. Verify that the Owner's operating personnel are adequately trained.

- B. **Commissioning Agent (CxAg):** The Commissioning Agent chairs the Commissioning Team and coordinates and oversees the development and execution of the Commissioning Plan. The Commissioning Agent shall be selected and employed by the Owner. The Commissioning Agent firm shall employ a licensed professional engineer in the state of Texas and shall be experienced in the commissioning of mechanical and electrical systems of the type and complexity installed in this project. The Commissioning Agent shall have experience in construction process, direct digital control systems, and test adjust and balance (TAB). The Commissioning Agent shall not be associated with or employed by the Contractor or any of its subcontractors or equipment/systems suppliers connected with the project.
- C. **Commissioning Coordinators:** Authorized representatives of the Owner, Contractor, Installing Contractors or other members of the Commissioning Team who are designated in writing to the Commissioning Agent, who attend commissioning meetings and who act as the responsible central point of contact between their companies and the Commissioning Agent.
- D. **Commissioning Plan:** The Commissioning Plan, written and prepared by the Commissioning Agent, provides guidance and outlines the execution of the Commissioning process, verifying that the systems perform at or above the expected level as specified in the Contract Documents. The Commissioning Plan is a detailed account of the Commissioning activities as they relate to the project. The plan includes a listing of Commissioning Team members, phases of the particular project, each team member's Commissioning related responsibilities during each phase and the expected deliverables from each team member. Communication protocols between the members of the team and their respective companies are defined in the Commissioning Plan. As a living document, the plan will be continuously updated to reflect the evolving process as developed by the Commissioning Team.
- E. **Commissioning Team:** The Commissioning Team can consist of all or part of the following members as dictated by the complexity and length of a project:
 - 1. Commissioning Agent
 - 2. Architect/Engineer
 - 3. Contractor
 - 4. Controls Contractor
 - 5. Electrical Contractor
 - 6. Mechanical Contractor
 - 7. Fire Protection Contractor
 - 8. Asset Management Representative
 - 9. Testing, Adjusting and Balancing Contractor
 - 10. Other Installing Contractors or suppliers of equipment.

- F. **Contractor:** The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the Work contracted and for the payment of all legal debts pertaining to the Work who acts directly or through lawful agents or employees to complete the contract Work
- G. **Contractors Test Report:** Contractors' tests are defined as any form of start-up, adjustment or calibration performed on individual pieces of equipment as specified within the technical sections of the construction documents. The Commissioning Agent will provide a Test Report Form to be used by the Installing Contractor as a cover sheet to the actual test results, for the documentation of each specified contractors test.
- H. **Deficiency:** An observation that prohibits the successful passing of any step on the verification test procedure for any equipment/system that is specified in the commissioning scope of the project.
- I. **Installing Contractor:** Contractor/Supplier responsible for the actual installation of the equipment/system.
- J. **Pre-Functional / System Readiness Checklist (SRCs):** Checklists created by the Commissioning Agent designed to demonstrate that the system is completely installed and ready for operational testing. At the end of installation, the Installing Contractor completes the checklist to certify that the work is complete and the system is ready for independent verification testing.
- K. **Verification / Functional Test Procedure(FPT):** A procedure that confirms each system will perform as specified functionally. The Installing Contractor will perform the verification testing. The Commissioning Agent will coordinate, witness, and document the final verification testing. Installing Contractor will sequence the system as outlined in the approved verification test procedure and provide the required test equipment.

1.4 COMMISSIONING PLAN

- A. **The Commissioning Plan** provides guidance in the execution of the Commissioning process.
- B. **The following** provides a brief overview of typical Commissioning tasks during construction and the general order in which they occur.
 - 1. Commissioning during construction begins with a scoping meeting conducted by the Commissioning Agent where the Commissioning process is reviewed with the Commissioning Team members.
 - 2. Additional meetings may be required throughout construction to plan, scope, coordinate, schedule future activities and resolve problems
 - 3. Equipment documentation is submitted to the Commissioning Agent through normal submittals, including detailed start-up procedures.
 - 4. The Commissioning Agent works with the Commissioning Team in developing start-up documentation formats, including pre-functional checklists to be completed, during the start-up process.
 - 5. The checkout and performance verification proceeds from simple to complex, from component level to equipment to systems and intersystem

levels with pre-functional checklists being completed before functional testing.

6. The Installing Contractors, under their own direction, execute and document the pre-functional checklists and perform start-up and initial checkout. The Contractor documents that the checklists and start-up were completed according to the approved plans. Installing Contractor(s) will provide a 72 hour notice, 3 normal business days, notification to the Commissioning Agent, Owner's Authorized Representative, and Owner's personnel of the date and time scheduled for performing start-up and initial checkout processes prior to the start up, so that they may witness start-up and the initial checkout.
7. The Contractor, in cooperation with the Installing Contractors, develops specific equipment and system functional performance test procedures.
8. The procedures are executed by the Installing Contractors, under the direction of, and documented by the Contractor with representation from the Commissioning Agent.
9. Items of non-compliance in material, installation or setup are corrected at the Installing Contractor's expense and the system retested until Deficiencies are corrected.
10. The Contractor reviews the O&M documentation for completeness and schedules and coordinates Owner training. All O&M documentation must be submitted per Section 01 78 23, Operation and Maintenance Data and approved before the start of training.
11. Commissioning shall be completed and documented before Substantial Completion inspection is scheduled.
12. The Contractor reviews, pre-approves and coordinates the training provided by the Installing Contractors and verifies that it was completed.
13. Deferred testing is conducted, as specified or required.

1.5 RESPONSIBILITIES

A. The Contractor shall:

1. Develop and provide a complete list of equipment and systems to be commissioned and of equipment and systems requiring Owner training for inclusion into the Commissioning Plan.
2. Facilitate the coordination of the Commissioning work and ensure that Commissioning activities are being scheduled and input into the master schedule.
3. Include the cost of Commissioning in the Contract Price.
4. Furnish a copy of all construction documents, addenda, requests for information, change orders, and approved submittals and shop drawings related to commissioned equipment to the Commissioning Agent.
5. Ensure each purchase order or subcontract written, includes requirements for submittal data, O&M data, commissioning tasks and training.

6. Develop and document Commissioning test procedures for all equipment with Installing Contractors.
 7. Ensure that all Installing Contractors execute their Commissioning responsibilities according to the Commissioning Plan, Contract Documents and schedule.
 8. Designate a Commissioning Coordinator who shall attend commissioning scoping meeting and other necessary meetings scheduled by the Commissioning Agent to facilitate the Commissioning process.
 9. Coordinate the training of the Owner personnel. Review and approve Contractor Training Plans. Coordinate digital recording on DVD media in Windows Media Video (wmv) format of owner personnel training.
- B. The Contractor shall ensure that all Installing Contractors:**
1. Include the cost of commissioning as a line item in the sub-contract price.
 2. Provide submittal data, O&M data, commissioning tasks and training according to Contract Documents in each purchase order or subcontract written.
 3. Designate a Commissioning Coordinator who shall attend Commissioning scoping meeting and other meetings scheduled and required by the Commissioning Agent to facilitate the Commissioning process.
 4. Provide normal cut sheets and shop drawing submittals of approved equipment as part of the submittals.
 5. Provide documentation prior to normal O&M manual submittals to the Contractor and Commissioning Agent for development of start-up and functional testing procedures.
 - a. Provide the following:
 1. Detailed manufacturer installation and start-up instruction.
 2. Operating, troubleshooting and maintenance procedures.
 3. Full details of any Owner-contracted tests.
 4. Full factory test reports.
 5. Full warranty information which clearly identifies all responsibilities of the Owner to keep the warranty in force.
 6. Installation, start-up and checkout materials that are shipped with the equipment.
 7. Field checkout sheet forms to be used by the, factory or field.

- b. Provide a preliminary O&M Manual to the Commissioning Agent for review and comment. The manual will follow the guidelines as set forth in Section 01 78 23, Operation and Maintenance Data.
 - c. Provide additional documentation, deemed necessary by the Commissioning Agent, for the Commissioning process.
- 6. Prepare and provide a copy of the O&M manuals and submittals of commissioned equipment according to the Contract Documents, including clarifying and updating the original sequences of operation to as-built conditions through normal channels through the Contractor to the Commissioning Agent for review and comment.
- 7. Assist in clarifying the operation and control of commissioned equipment in areas where the specifications, control drawings or equipment documentation are not sufficient for writing detailed testing procedures. Coordinate efforts with Architect/Engineer as required.
- 8. Provide the specific functional performance test procedures to ensure feasibility, safety and equipment protection and provide necessary written alarm limits to be used during the tests to the Commissioning Agent through the Contractor.
- 9. Develop a full start-up and initial checkout plan using manufacturer's start-up procedures and the pre-functional checklists for all commissioned equipment. Submit through the Contractor to Commissioning Agent for review and comment prior to start-up.
- 10. Execute the Pre-functional System Readiness Checklists for all commissioned equipment during the start-up and initial checkout process.
- 11. Perform and clearly document all completed start-up and system operational checkout procedures, providing a copy to the Contractor and Commissioning Agent.
- 12. Address and resolve current punch list items before functional testing.
- 13. Provide skilled technicians to execute starting of equipment and to execute the functional performance tests. Ensure that technicians are available and present during the agreed upon schedules and for sufficient duration to complete the necessary tests, adjustments, and problem solving.
- 14. Perform functional performance testing for specified equipment. Assist the Commissioning Agent in interpreting the data, as necessary.
- 15. Correct differences between specified and observed performance as interpreted by the Contractor and/or Commissioning Agent and Architect/Engineer and retest the equipment.
- 16. Prepare redline and CAD as-built drawings for all drawings and final as-builts for Contractor-generated coordination drawings.
- 17. Provide training of the Owner's operating personnel as required in the Commissioning Plan.
- 18. Coordinate with equipment manufacturers to determine specific requirements to maintain the validity of the warranty. Develop, execute

and document contractor maintenance plans for equipment put into service prior to beneficial occupancy. Provide records and reports of all pre-turnover maintenance.

19. Provide equipment for testing per specification requirements.
20. Provide all requested submittal data, including detailed start-up procedures and specific responsibilities of the Owner to keep warranties in force.
21. Include all special tools, including software and instruments only available from vendor and specific to a piece of equipment required for testing equipment according to these Contract Documents in the base bid price to the Contractor. This does not include stand-alone data logging equipment that may be used by the Commissioning Agent.
22. Provide information requested by the Commissioning Agent regarding equipment sequence of operation and testing procedures.
23. Review test procedures for equipment installed by factory representatives.

C. Architect/Engineer.

1. As required, designate a Commissioning Coordinator who shall attend commissioning scoping meeting and other necessary meetings scheduled by the Commissioning Agent to facilitate the commissioning process.
2. Provide Basis of Design (BOD) documentation to the Commissioning Agent.
3. Assist in clarifying the operation and control of commissioned equipment in areas where specifications, control drawings or equipment documentation are not sufficient for writing detailed testing procedures.
4. Provide technical assistance for resolution of non-conformances or deficiencies.

D. Commissioning Agent. The primary role of the Commissioning Agent is to prepare and execute the Commissioning Plan, and to observe and document performance. In this role the Commissioning Agent is to identify which systems are functioning in accordance with the Contract Documents and those that need corrective action. The Commissioning Agent is not responsible for design concept, design criteria, compliance with codes, design or general construction scheduling, cost estimating, or construction management. The Commissioning Agent may assist with problem solving non-conformances or deficiencies, but ultimate responsibility for correcting Deficiencies resides with the Contractor, Installing Contractor, Manufacturer and/or Architect/Engineer as appropriate.

1. Prepare and maintain the Commissioning Plan.
2. Coordinate Commissioning activities.
3. Coordinate the commissioning work and coordinate with the Commissioning Team to ensure that Commissioning activities are being incorporated into the master schedule.

4. Assist with the revisions to the Commissioning Plan during the construction phase of the Project.
5. Plan and conduct a Commissioning scope meeting.
6. Request and review information required to perform Commissioning tasks, including O&M materials, Contractor start-up and checkout procedures.
7. Ensure detailed testing procedures are written.
8. Review Contractor and Installing Contractors submittals, along with Contractor design reviews, applicable to systems being commissioned for compliance with Commissioning needs.
9. Review, approve and distribute preliminary pre-functional tests and checklists.
10. Review and approve the start-up and initial systems checkout plan as developed by the Installing Contractors.
11. Perform site visits, to observe component and system installations. Attend selected planning and job-site meetings to obtain information on construction progress. Review construction-meeting minutes for revisions / substitutions relating to the commissioning process. Assist in resolving discrepancies.
12. Approve pre-functional tests and checklist completion by reviewing pre-functional checklist reports and by selected site observation and spot-checking.
13. Approve systems startup by reviewing start-up reports and by selected site observation.
14. Analyze any functional performance trend logs and monitoring data to verify performance.
15. Coordinate, witness and approve manual functional performance tests performed by Installing Contractors. Coordinate re-testing as necessary until satisfactory performance is achieved.
16. Review equipment warranties to ensure that the Owner's responsibilities are clearly defined.
17. Oversee and coordinate the training of the Owner's operating personnel.
18. Compile and maintain a Commissioning issues record log, to include observations as required.
19. Review and approve the O&M manuals.
20. Provide a final Commissioning report. Make suggestions for improvements and revisions in the O&M manuals. Identify additional areas that should be included in the warranty information provided or in other areas under the Contract Documents. Assist airport staff in developing reports, documents and requests for services to remedy outstanding problems.

1.6 SCHEDULING

- A. The Commissioning Agent will work with the Contractor to schedule the Commissioning activities. The Contractor will integrate all commissioning activities into the master schedule. All parties will address scheduling problems and make necessary notifications in a timely manner in order to expedite the commissioning process.

1.7 QUALITY ASSURANCE

- A. Each Contractor will assign a Commissioning Coordinator with at least five year's experience with coordination of construction disciplines and verification testing of complete systems. This position is not a full time position unless the complexity of the job requires such a full time position. Contractor Commissioning Coordinator's responsibilities include:
 - 1. Coordination meetings.
 - 2. Planning.
 - 3. Scheduling.
 - 4. Documentation.
 - 5. Maintain communication and coordination with Commissioning Agent.
 - 6. Development of testing procedures in coordination with the Installing Contractor.
 - 7. Installing Contractors' test report submittal.
 - 8. System readiness checklists submittal.
 - 9. Perform system verification tests.
 - 10. Corrective actions rectification and documentation.
 - 11. Specified training planning and coordination.

1.8 QUALITY CONTROL

- A. Ensure that the Contractor and all contractually responsible Installing Contractors follow the established Contractor's Quality Control Program and Procedures.
- B. Ensure that the Contractor and contractually responsible Installing Contractors correct all deficiencies and make necessary adjustments to O&M manuals and as-built drawings for applicable issues identified in any seasonal testing.

1.9 SUBMITTALS

- A. As required, the Commissioning Agent will provide the Contractor with a specific request for the type of submittal documentation required to facilitate the Commissioning work. These requests include the submission of electronic versions of all submittals, documents, manuals, etc. and will be integrated into the normal submittal process and protocol of the Contractor and added to the Contractor's submittal register. At minimum, the request will include:
 - 1. Manufacturer and model number.
 - 2. Manufacturer's printed installation and detailed start-up procedures.
 - 3. Full sequences of operation.

4. O&M data.
 5. Performance data.
 6. Any performance test procedures.
 7. Control drawings.
 8. Details of Owner contracted tests.
 9. List of installation materials that are shipped with the equipment.
 10. Field checkout sheet forms to be used by the factory or field technicians.
 11. Factory test results.
- B. Include all documentation requested by the Commissioning Agent in the Installing Contractor's O&M manual.
- C. Submit information related to the commissioned equipment conforming to the requirements of the Contract Documents as it relates to the Commissioning process, to the functional performance of the equipment and to adequacy for developing test procedures to the Commissioning Agent for review and approval. This review is to aid in the development of functional testing procedures and to verify compliance with equipment specifications.
- D. Ensure that Installing Contractors designate Commissioning Coordinators and provide information facilitating the incorporation and coding identification of Commissioning activities in the Contractors' master construction schedule within four (4) weeks of contract award.
- E. Submit detailed verification testing schedule to Commissioning Agent at least four (4) weeks prior to start of testing.
- F. Ensure that Installing Contractors submit test reports through the Contractor to Commissioning Agent upon successful completion of each test.
- G. Submit Operation and Maintenance manuals to Architect/Engineer and the commissioning Agent for review within at least ninety (90) days prior to the start of scheduled verification testing.
- H. Submit Operations and Maintenance manuals in accordance with requirements of Section 01 78 23, Operation and Maintenance Data, and the individual sections of the Specifications requiring operations and maintenance manuals. The requirements of Specifications will govern.
- I. Submit certifications from the Installing Contractors that installed and operating equipment and systems have been completed with all deficiencies corrected and that they are performing to Specifications per tests and other requirements stipulated.
- 1.10 TRAINING**
- A. Coordinate operation and maintenance training activities per the Commissioning Plan. Provide training plans for equipment software systems and major components as specified in individual Specifications ninety (90) days prior to beginning Verification testing.
- B. The Training Plan should include:

1. Equipment or system involved in training session.
 2. Trainer's name, company and experience.
 3. Course outline / syllabus and list of training materials.
 4. Time required for the training session(s).
- C. Suggested training topics in the syllabus:
1. Preventive maintenance procedures and frequencies.
 2. Visual inspection parameters. Operating sound and noise warnings.
 3. Normal range of gauge and meter readings.
 4. Use of special tools.
 5. Source of operating supplies, lubricants, cleaning materials, etc.
 6. Manufacturer contact names and telephone numbers.
 7. Warranty periods and enforcement procedures.
 8. Design and normal functional operating parameters (capacities, flows, temperatures, speeds, energy consumption, etc.
 9. Breakdown or malfunction conditions and troubleshooting.
 10. Routine testing procedures.
- D. Document performance of training session by completing the Operation and Maintenance Training Form. Indicate on the form:
1. Date of training.
 2. List of attendees, their signatures and their affiliation.
 3. Duration of training (hours and/or minutes).
 4. Topics agenda, instructor names & company affiliation, instructor contact information.
 5. List of planned handouts.
- E. Obtain written acceptance of training session from the Commissioning Agent on Operation and Maintenance Training Form.
- F. Record all training sessions. Record each session on a dedicated digital video disk (DVD) standard play mode. Submit two(2) DVDs to the Commissioning Agent with fully executed Operation and Maintenance Training Form.

PART 2 – PRODUCTS

2.1 TEST EQUIPMENT

- A. Provide all standard testing equipment required to perform startup and initial checkout and required functional performance.
- B. Provide special equipment, software, tools, and instruments that are only available from vendor and specific to a piece of equipment (test tools) required for testing equipment. These test tools are to become the property of Owner when testing is completed. Repair any damage to these test tools and calibrate

so they are fully functional when given to the Owner. Provide full documentation on the use, maintenance and calibration with these test tools.

- C. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified in the Specifications.
- D. Calibration records for all testing equipment shall be provided to the Commissioning Agent through the Contractor.

PART 3 – EXECUTION

3.1 MEETINGS

- A. **Scoping Meeting:** Approximately 30-60 days prior to commencement of construction and / or installation (of the equipment/systems to be commissioned), the Commissioning Agent will schedule, plan and conduct a commissioning scoping meeting with the entire commissioning team in attendance. The Contractor will prepare and distribute meeting minutes to all parties. Information gathered from this meeting will allow the Commissioning Agent to revise the Commissioning Plan to its "final" version, which will also be distributed to all parties.
- B. **Miscellaneous Meetings:** Other meetings may be planned and conducted by the Commissioning Agent as construction progresses. These meetings will cover such items as coordination, deficiency resolution and planning issues with particular Installing Contractors.

3.2 REPORTING

- A. The Commissioning Agent will provide regular updates and reports.
- B. The Commissioning Agent will regularly communicate with the Owner and/or the Owner's representative, keeping them apprised of Commissioning progress and scheduling changes through memos, progress reports, etc.
- C. The Commissioning Agent will prepare non-conformance and deficiency reports with the review and testing as described in later sections.
- D. A final summary report by the Commissioning Agent will be provided focusing on evaluating commissioning process issues and identifying areas where the process could be improved. All acquired documentation, logs, minutes, reports, deficiency lists, communications, findings, unresolved issues, etc., will be compiled in appendices and provided with the summary report. Pre-functional checklists, functional tests and monitoring reports will be part of the final report

3.3 CONTRACTOR TESTS

- A. Ensure that the Installing Contractor/Suppliers provide a list and schedule of specified contractor tests to the Commissioning Agent.
- B. Provide a minimum two weeks' notice to the Commissioning Agent before execution of specified Contractor's tests.
- C. The Contractor shall submit test reports to the Commissioning Agent within one week of completion of each test.

3.4 SUBSTANTIATING SYSTEM READINESS (CONTRACTOR)

- A. Construct or install systems and confirm readiness for testing prior to start of verification test procedures.
- B. Inform the Commissioning Agent in writing of system readiness for verification testing at least two-weeks prior to the scheduled start of testing. Complete System Readiness Checklists and submit to Commissioning Agent.
- C. Perform and document instrumentation and digital controller calibration or provide documentation verifying manufacturer's performance of calibration prior to verification testing. The Commissioning Agent may observe calibration procedures.
- D. Do not start system verification testing until system is documented ready for testing via submittal of System Readiness Checklist to the Commissioning Agent.

3.5 START-UP, PRE-FUNCTIONAL / SYSTEM READINESS CHECKLISTS AND INITIAL CHECKOUT

- A. The following procedures apply to all equipment and systems to be commissioned.
- B. The Installing Contractor responsible for startup of any equipment/system will develop detailed start-up plans for all equipment. Each piece of equipment will receive a full pre-functional checkout. The Commissioning Agent will assist in the development of detailed start-up plan to ensure that each of the manufacturer-recommended procedures has been completed. Parties responsible for pre-functional checklists and startup are identified in the commissioning scoping meeting and in the checklist forms. Parties responsible for executing functional performance tests are identified in the testing requirements.
 - 1. The Commissioning Agent will assist in the development of checklists that indicate required procedures to be executed as part of startup and initial checkout of the systems and the party responsible for their execution.
 - 2. The Contractor determines which trade is responsible for executing and documenting each of the line items tasks and notes that trade on the form. Each form may have more than one trade responsible for its execution.
 - 3. The Contractor will ensure that the Installing Contractor responsible for the purchase of the equipment develops the full start-up plan by combining (or adding to) the Architect/Engineer checklists with the manufacturer's detailed start-up and checkout procedures from the O&M manual and the field checkout sheets. The Commissioning Plan will include checklists and procedures with specific boxes or lines for recording and documenting the checking and inspections of each procedure and a summary statement with a signature block at the end of the plan. The full start-up plan could consist of:
 - a. Pre-functional checklists.

- b. Manufacturer's standard written start-up procedures copied from the installation manuals with check boxes by each procedure and a signature block added by hand at the end.
 - c. The manufacturer's field checkout sheets.
 - 4. The Contractor will submit the full start-up plan to the Commissioning Agent for review and approval.
 - 5. The Commissioning Agent will review and approve the procedures and the format for documenting them, noting any procedures that need to be added.
 - 6. The full start-up procedures and the approval form may be provided to the Contractor for review and approval, depending upon the management protocol.
- C. Execution of Pre-functional Checklists and Start-up.
 - 1. Two (2) weeks prior to start-up, the Contractor and its' Installing Contractors and vendors will schedule start-up and checkout with the Commissioning Agent. The performance of the pre-functional checklists, startup and checkout are directed and executed by the Installing Contractor or vendor with oversight by the Contractor. When checking off pre-functional checklists, signatures may be required of other Installing Contractors for verification of completion of work.
 - 2. The Commissioning Agent shall observe the procedures for each piece of primary equipment At the Commissioning Agents discretion, a statistical sampling strategy may be used for multiple units of the same equipment.
 - 3. The Commissioning Agent shall observe a sampling of the pre-functional and start-up procedures for lower-level components of equipment.
 - 4. The Contractor in conjunction with Installing Contractors shall execute start-up and provide the Commissioning Agent with a signed and dated copy of the completed start-up and pre-functional tests and checklists.
 - 5. Only individuals that have direct knowledge and witnessed that a line item task on the pre-functional checklist was actually performed shall initial or check that item off.
- D. Deficiencies, Non-conformance and Approval in Checklists and Start-up.
 - 1. The Contractor shall ensure that the Installing Contractors clearly list any outstanding items of the initial start-up and pre-functional procedures that were not completed successfully, at the bottom of the procedures form or on an attached sheet. The procedures form and any outstanding Deficiencies are provided to the Contractor and Commissioning Agent within two (2) days of test completion.
 - 2. The Contractor and Commissioning Agent review the report and submit either a non-compliance report or an approval to the Installing Contractor. The Contractor and Commissioning Agent shall work with the Installing Contractors to correct test Deficiencies or uncompleted items. The Contractor shall have its' Installing Contractor correct all areas that are Deficient or incomplete in the checklists and test in a timely manner, and

shall notify the Commissioning Agent as soon as outstanding items have been corrected and resubmit an updated start-up report and a statement of correction on the original Non-Compliance Report. When satisfactorily completed, the Commissioning Agent recommends approval of the execution of the checklists and start-up of each system using a standard form.

3.6 VERIFICATION/ FUNCTIONAL TESTS

- A. Provide functional testing and verification tests to demonstrate that each system is operating according to the Contract Documents. Use functional testing to facilitate bringing the systems from a state of substantial completion to full dynamic operation. Operate each system through all modes of operation to measure for the specified system response. Verify each sequence in the sequences of operation.
- B. Perform functional testing and verification by manual testing (persons manipulate the equipment and observe performance) or by monitoring the performance and analyzing the results. The Commissioning Agent will determine which method is most appropriate for tests that do not have a method specified. Perform each function and test performed under conditions that simulate actual conditions as close as is practically possible. Simulating conditions may be allowed if testing to actual conditions can be demonstrated as impractical. The Contractor and its' Installing Contractor executing the test shall provide all necessary materials, system modifications, etc. to produce the necessary flows, pressures, temperatures, etc. necessary to execute the test according to the specified conditions. Return all building equipment and systems affected by temporary modifications used for testing to their pre-test condition at completion of the test.
- C. Perform verification test procedures as outlined in the approved verification test plan.
- D. Provide input into the Contractor's master scheduling process with regards to timing and duration of verification test procedures.
- E. The Commissioning Agent will review and provide comment on final detailed verification test procedures. The Contractor and its' Installing Contractors shall develop the verification test procedures from information incorporated in system shop drawings and submittals. Provide feedback on the efficiency of the procedures and possible alternate approaches to achieving the same results.
- F. Provide personnel and equipment, to perform the verification test procedures.

3.7 CORRECTIVE ACTIONS

- A. Perform corrective actions to resolve deficiencies.
- B. The Contractor will document deficiencies discovered during the Commissioning process on Corrective Action Report (CAR) Form within one (1) working day of discovery.
 - 1. Deficiency Identification Process:
 - a. Document date of identification.
 - b. Describe nature of Deficiency.
 - c. Enter Deficiency into Outstanding Punch List Log.

- d. Distribute original CAR to the Installing Contractor's Commissioning Coordinator.
 - e. Distribute copies to:
 - 1) Commissioning Agent.
 - 2) Owner's Authorized Representative.
 - 3) Architect/Engineer.
 - 4) Other contractors impacted by deficiency.
- 2. The Contractor shall have the Installing Contractor:
 - a. Obtain original form.
 - b. Record date of deficiency.
 - c. Provide description of corrective action required.
 - d. Name of person issuing the deficiency.
 - e. Estimated date to complete the corrective action.
 - f. Distribute original form Commissioning Agent.
 - g. Distribute copies to:
 - 1) Owners Authorized Representative.
 - 2) Architect/Engineer (A/E).
 - 3) Contractor.
 - 4) Installing Contractor's Commissioning Coordinator.
 - 5) Other contractors impacted by deficiency.
- 3. When corrective actions are completed :
 - a. Obtain the original form.
 - b. Record date of correction.
 - c. Provide description of final equipment status or corrective action performed.
 - d. Name of Installing Contractor performing work.
 - e. Submit original form through channels to Commissioning Agent.
 - f. Distribute copies to:
 - 1) Owners Authorized Representative.
 - 2) Architect/Engineer (A/E).
 - 3) Contractor.
 - 4) Installing Contractor's Commissioning Coordinator.
 - 5) Other contractors impacted by deficiency.
- 4. The Commissioning Agent will verify completion of corrective action:
 - a. Date of retest.

- b. Determine status - resolved or corrective action required.
 - c. Name of person performing verification.
 - d. Enter resolution into Corrective Action Report (CAR) log.
 - e. Distribute copies to:
 - 1) Owners Authorized Representative.
 - 2) Architect/Engineer.
 - 3) Installing Contractor's Commissioning Coordinator.
 - 4) Contractor.
 - 5) Other contractors impacted by deficiency.
- C. Contractor pays for all retests if they are responsible for the deficiency. If ten percent, or three each, whichever is greater, pieces of similar equipment fail to perform per requirements of the Contract Documents due to manufacturing defect, all similar units may be considered unacceptable. The Contractor shall provide the Owner with the following:
- 1. Within one (1) week of notification, the Installing Contractor shall examine all other similar units making a record of the findings. The findings shall be provided within two (2) weeks of the original notice.
 - 2. Within two (2) weeks of the original notification, the Installing Contractor or manufacturer shall provide a signed and dated, written explanation of the problem, cause of failures, etc. and all proposed solutions, which shall include full equipment submittals of the original installation.
 - 3. The Owner will determine whether a replacement of all similar units or a repair is acceptable.
 - 4. Replace or repair all similar items and extend the warranty to provide the full warranty coverage period. The replacement/repair work shall proceed within one (1) week from Owner's determination on replacement or repair is made unless Owner agrees to a different schedule.
- D. The Commissioning Agent will note each satisfactorily demonstrated function and recommend acceptance of each test using a standard form. The Owner's Authorized Representative gives final approval on each test using the same form, providing a signed copy to the Commissioning Agent and the Contractor.

3.8 OPERATION AND MAINTENANCE MANUALS

- A. The following O&M manual requirements do not replace O&M manual documentation requirements elsewhere in these specifications.
- B. The Architect/Engineer shall compile and prepare design documentation for all equipment and systems specified and deliver this documentation to the Contractor for inclusion in the O&M manuals.
- C. The Commissioning Agent shall receive a copy of the O&M manuals for review.
- D. Field checkout sheets and logs should be provided to the Commissioning Agent for inclusion in the Commissioning Record Book section of the O&M Manuals.

- E. Review of the Commissioning related sections of the O&M manuals shall be made by the Commissioning Agent.

3.9 TRAINING OF OWNER PERSONNEL

- A. Coordinate, schedule and ensure that training is completed.
- B. The Commissioning Agent shall be responsible for overseeing and approving the content and adequacy of the training of Owner personnel for commissioned equipment.

3.10 WRITTEN WORK PRODUCTS

- A. The Contractors' written work products will consist of the start-up and initial checkout plan described and the filled out start-up, initial checkout and pre-functional checklists, manufacturer's factory and field testing and inspection forms, Contractor inspection forms, and Operation and Maintenance Manuals both in electronic and hard copy. These work products will be supplied to the Commissioning Agent to be included in the final Commissioning report as required.

- END OF SECTION -